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ARTICLE I.

TRACHEOTOMY IN CROUP AND DIPHTHERIA, WITH CASES. By
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ty Hospital, Chicago.

The main object in writing this paper and reporting these cases is to contribute our mite toward rescuing this operation from the doubtful position it occupies as a remedial measure and placing it in the position it merits.

Most authors in writing on this subject, mention the operation as one that may be done under certain circumstances and admit that lives possibly have been saved by it that otherwise would have been lost. To Trousseau belongs the credit of reviving and, in France, popularizing the operation. His unfailing faith through a series of years and the magnificent success attending his efforts are worthy of emulation for all time. It may be said that in his enthusiastic advocacy of it he resorted to the operation in many cases that would otherwise have recovered and hence his large

average of successes. Admitting this, it proves the dangers following the operation are not so grave as had been supposed, and also that the earlier it is resorted to, the greater the chance of a successful issue. Vogel, in his work on Diseases of Children, says in the article on Croup (chapter 4, p. 259): "I have never yet seen a child recover from the genuine fibrinous croup, but from the diphtheritic form, three children out of twenty or twenty-five have recovered." Further on, p. 267, in speaking of tracheotomy as a remedial measure he says: "Let us assume that all the children operated on had genuine croup, the rate of recoveries (twenty-two per cent.), is nevertheless an extremely unfavorable one, and especially since the greater portion of the children operated on suffered from the milder diphtheritic forms." He also says he neither advocates or opposes the operation when proposed by other physicians.

Barclay in his article in Holmes' Surgery, on Croup and Diphtheria, says: "English medical men seem now very generally to incline to the opinion that the operation if not to be recommended, is at least justifiable, as it does not materially increase the risk of a fatal issue, and unquestionably in some cases, offers the only chance of recovery, *but to be successful it must be performed at an early period of the attack.* The italics are ours. Dr. E. H. Bennett, of Dublin, Ireland, says (in the Dublin *Journal of Medical Science*, March, 1880, p. 250), in relating a case where he had operated, "I make no apology for bringing forward this case, because most of the members know that tracheotomy for croup is rarely performed in Dublin, in consequence of the objections to the operation put forward by the late Mr. Porter, and the result of his strong objections to it has been that very few of us have had any experience of the operation." After alluding to Mr. Spence's experience, "ninety-five cases, recoveries one in three," he concludes: "Even with this condition of affairs I think we should set aside the opinion of Mr. Porter, and hold the operation to be admissible."

French surgeons, as a rule favor the operation, and in consequence of its timely performance have a high average of successful cases. In America the operation was not much in vogue till the last decade. Meigs and Pepper, in 1870, Philadelphia, consistently advocated the performance of the operation in suit-

able cases, and in the Eastern cities it is now being practiced with a steadily increasing average of successful cases. Coming near home we have in this State, many earnest disciples of Rousseau, and judging from the success of their efforts, not unworthy ones either.

Dr. H. Z. Gill, of Jerseyville, Ill., in his report to the State Medical Society, gives a very elaborate exposition of the standing of the operation in our midst; he earnestly and consistently pushes its claim to recognition, and very pertinently remarks that out of the 200 or so deaths from croup and diphtheria in the city of Chicago, between forty and fifty might have been saved had the operation been resorted to. Drs. Bogue, Johnson, Andrews and others of Chicago, have been operating for several years, and, considering the desperate character of the cases, with a high average of successful results. In the concluding portion of Dr. Gill's report, he gives the opinion of some medical men in the State regarding the operation. One gentleman says he regards it as an unphilosophical irrational remedy, the results not justifying its performance. Another says a congress of physicians could not persuade him to operate in diphtheria, but in croup he is always ready to be up and at it.

From this it will be seen that professional opinion is by no means a unit on the merits of the operation. The only way to settle the question is by practical experience. The man who condemns the operation and denies the patient the chance afforded by its performance assumes a far greater responsibility than he who operates on every available opportunity, and conscientiously carries out the after-treatment. We take the ground that as medical men, when all medical means have failed, we have no right to deny the little sufferer the last chance for its life, and furthermore that the parents have no moral right to do this either. In an experience extending over a number of years we can say that in no case where the operation has been advised and the advice rejected (and they have been many), has the child recovered. We trust the time is not far distant when the medical attendant will be as ready to perform tracheotomy as a life-measure, as he now is to adjust the obstetric forceps on an impacted head.

Within the past nine months we having been treating these

cases (croup and diphtheria), by a continuous spray of chlorate of potash solution with one per cent. of carbolic acid, also lime-water carbolized to the same degree, and the success which has attended our efforts rather complicates than otherwise our selection of cases for operation.

Out of a series of between thirty and forty cases of all forms, there have been no less than eight recoveries where the larynx was involved, and which might, under ordinary circumstances, be considered suitable cases for operation. We do not claim that the treatment is new, but we do claim that it is more effectually carried out by means of large atomizers, so that the atmosphere of the apartment can be thoroughly saturated with the spray, and the little patient need not be alarmed by the proximity of the apparatus. The atomizer may best be placed in the center of the room, several feet away from the patient. After a careful trial of the various remedies used in the form of spray, we have come to the conclusion that lime-water with one per cent. of carbolic acid and four per cent. of glycerine possesses more solvent power over the membrane than any other. The grand question to be decided is when to operate. If we operate early, we have the satisfaction of saving a large percentage of cases, but feeling doubtful if some of these would not have recovered without surgical interference. If we operate late, we know by experience the rate of mortality rises to a discouraging height. So the first question that naturally arises is: Does the operation *per se* jeopardize the patient's life? We think to a slight extent it does.

As regards the actual performance of the operation, from our experience we are of the opinion, if due care be taken, the chances of mishap are so trifling as to cut but a small figure in the case. This may smack of temerity when we consider that Gross, that surgical veteran, says that he knows of no operation he approaches with greater dread than that of tracheotomy when the subject is a child with a short, fat neck. There is a dissimilarity in the difficulties attending this procedure which does not attend any other operation that we have been accustomed to perform. In Case 15, which was the child with the fat neck (and a truly difficult operation it proved), it seemed as if we never would reach the trachea; yet in Case 16, the patient about

the same age and fully as robust, the trachea was exposed by a few strokes of the scalpel, and the operation completed with the utmost facility. The actual danger attending the operation commences at its completion. The presence of the tube and the direct entrance of air into the bronchii no doubt have an influence in producing those pulmonary complications which so often prove fatal, but their influence must not be over-estimated, as in many cases these complications are in existence before the operation has been attempted, the cause being the prolonged stridulous breathing, the operation not being resorted to in time. We will not stop now to describe the operation and the danger attending it, as it may be seen in any text-book on surgery. We may remark, however, *en passant*, that in opening the trachea we insert two tenaculæ, one each side of the site of incision. By this means we not only steady and lift the trachea, but by diverging the instrument at the point of insertion, we make the opening wide enough to admit the tube without difficulty. A very excellent device is to pass through the outer tube a closely fitting, soft rubber cathether, so that its point just projects beyond the end of the tube, the rubber being pointed, soft and pliable, readily pushes its way into the trachea without injuring the tissues. As regards the many instruments which have been devised for executing this maneuver, we would not recommend anyone to attempt the operation till he can dispense with their aid.

Martin, of Boston, has operated dispensing with the tube entirely. He cut down on the trachea in the usual manner, and by means of silk thread or silver wire passed through the trachea at the edge of the incision, he holds them apart. Another plan is to make a circular flap in the trachea and have it held back. These modifications we have not yet tried, but considering that the presence of a silver or rubber tube in the windpipe must be a source of irritation, they are deserving of a fair trial. Dr. Martin has had good success.

We now treat all cases of croup and diphtheria, whether there be laryngeal implication or not, by the continuous spray of lime-water with glycerine and carbolic acid in the proportions before mentioned.

We must digress somewhat in order to consider the subject

from a pathological point of view. It is now beyond doubt that a sphaero-bacterium—the so-called micrococcus diphthericus—is constantly found in the membrane of diphtheria and croup. Whether this minute organism is the product or bearer of diphtheric poison, or is only an unessential concomitant, finding the diphtheric infiltrated tissue the proper soil to thrive in, we do not know. Our knowledge about the character of the poison in contagious and miasmatic disorders is yet so defective that rational therapeutics based on anything but the blind *a posteriori* experience of olden times in most of these diseases has hitherto been an impossibility. Even if the micrococcus be no essential element of the diphtheric poison, it is an element, and the only one the presence of which we are sure of. It is rational, therefore, that we take this as a hint to a rational treatment, especially as most of the measures heretofore proposed have been abandoned because, after fair trial, they have proved to be useless. The first remedy to choose, of course, is some substance that will destroy the life and development of these micro-organisms—i. e., anti-bacterial remedies. As to the point of application of these remedies, it is natural to apply them to the air passages, as these parts are not only the main seat of the local disturbance of the disease, but most likely the parts through which the poison invades the body.

The inhalation of atomized fluid, as was said before, is nothing new, but we believe most of the older instruments were inefficient, and that antiseptic solutions for atomizing have not been used with the constancy and faithfulness they deserve.

Cases Nos 11 and 12 (Lee's) are fair examples in support of the treatment. Case 13 at first improved, but subsequently suffered a relapse. The chances for recovery would have been much better had the operation been resorted to at the first symptom of relapse. Cases 16 and 17 had been treated with the spray for several days before operation, and the condition of the membrane and the ease with which it was expelled, speaks volumes in favor of the treatment, as it must be recollectcd these were cases of genuine diphtheria where hitherto operative interference has been regarded as utterly futile. Where the evidences of blood poison are well marked, the laryngeal involvement and septic influence progressing *pari passu*, it is folly to suppose an operation could be of any benefit; where the characteristic listlessness is present,

there is not the acute suffering for want of sufficient oxygen that exists in cases where the obstruction exists without the septic influence predominating ; so it may be summed up that by the employment of antiseptic remedies, with the timely performance of tracheotomy in suitable cases, we give the patient a double chance. The antiseptic treatment *per se* is no doubt a powerful agent in our hands in battling with this dread disease, and in a certain number of desperate cases has proved an efficient remedy, but as we understand it we would not feel justified in trusting to it alone in cases grave enough to suggest operative interference.

With a view of testing the correctness of this theory, we would recommend a faithful and efficient application of the remedy, the patient having been placed under the spray, the internal medication consisting of quinine and alcohol in large and frequently repeated doses. And here we must again digress to protest against the employment of any depressing agent in treating these diseases. We are convinced that it is a septic poison generated in a congenial soil, and consequently must regard the use of emetics, escharotics, arterial sedatives, etc., as unphilosophical and irrational. If under the spray and internal stimulation the improvements be not steady and progressive, operative interference should be immediately resorted to, provided the nervous system be not overwhelmed by the septic poison. Every hour's delay enhances the danger, so quickly and surely the dreaded pulmonary complications are added to the previous difficulty. In Dr. E. H. Bennett's case, an examination made between ten and eleven o'clock in the forenoon failed to reveal any complication in the chest, yet in the evening there was a well-defined pneumonia, and at the time of the child's death—one o'clock the next day—the greater part of the lung had become absolutely solid. Remove the tube as early as possible (we commence on the fourth day), if only for an hour it can be dispensed with, a point is gained ; next trial the child can breathe without its assistance for a longer period, and so on. The presence of the tube is a constant menace, and this fact should not be lost sight of. In Case No. 16 (Lee's) the child had pneumonia when operated on, and it was particularly desirable that the tube should be dispensed with as quickly as possible. At the end of the fourth day, Dr.

Lee removed it, and remained with the child for ten hours. Though at first the breathing was quite difficult, he refrained from re-introducing the tube, preferring to wait till it grew absolutely imperative. In a couple of hours the parts appeared to accommodate themselves to the altered condition, so that in twelve hours there was no further danger from that quarter.

M. Cairn, in the *St. Louis Courier of Medicine*, in reviewing the causes which may constitute an obstacle to the removal of the canula, mentions prominently two varieties of tracheal constriction. The first variety, although rare, has, however, been demonstrated in a certain number of cases. It arises through the presence of fleshy growths springing from the wound, especially through those deeply seated upon the borders of the tracheal incision, and which grow in the midst of a cicatricial tissue projecting into the air passage after the closure of the cutaneous wound. The second variety up to the present time has not been described at all. A tracheotomized child was seized with a fit of suffocation just as the physician was attempting to effect a permanent removal of the canula. Examining the depths of the tracheal wound, he perceived a reddish prominence in the interior of the trachea which was taken for fleshy vegetation of the posterior wall. The child died in a fit of suffocation. Prof. Guyon recognized, upon the post mortem specimen sent him, that the projection regarded during life as vegetation was formed by the posterior wall of the trachea itself, which was folded longitudinally in its entire thickness. This folding was itself due to the approximation of the posterior extremities of the tracheal rings, separated anteriorly for the introduction of the canula. M. Currie, experimenting with the view of discovering the conditions of the production of this protrusion, concluded this particular variety of constriction which hitherto had not been pointed out, ought to be nevertheless rather frequent among children. It occurs after the introduction of the canula, and the more readily according as the membranous span which lies between the posterior extremities of the rings is large. It affects chiefly the first three rings of the trachea. The projection which results produces a tracheal constriction that may persist and prove a permanent obstacle to the removal of the canula.

NAME.	AGE.	CAUSE.	RESULT.	RESIDENCE.	OPERATOR.	DATE.	REMARKS.
1. Nannie Keegan.	3 years, 10 mos.	Diphtheria.	Died.	Chicago.	Dr. E. W. Lee.	Aug. 29, '77.	Sick three days. Used chloroform. Lived thirty hours.
2. John Phalon.	4 years.	Diphtheria.	Died.	Chicago.	Dr. E. W. Lee.	Oct. 18, '77.	Sick two days. Asphyxia imminent. Gave chloroform. Lived two and a half days. Died by asphyxia.
3. Clara Nolan.	7 years.	Memb. Croup.	Recovered.	Chicago.	Dr. E. W. Lee.	Oct. 23, '77.	Two weeks complaining. Chloroform. Artificial respiration necessary after the operation. Removed tube sixth day.
4. Matthew Curran.	4 years.	Memb. Group.	Died.	Chicago.	Dr. E. W. Lee.	Nov. 17, '77.	Sick thirty-six hours. Used two and a half days. Died by exhaustion. Chloroform. Lived twelve hours;
5. Eddie Nolan.	4 years.	Memb. Group.	Died.	Chicago.	Dr. E. W. Lee.	Nov. 23, '77.	Sick five days. Chloroform. Lived four hours; died of exhaustion.
6. Elsie Purcell.	3½ yrs.	Memb. Group.	Died.	Chicago.	Dr. E. W. Lee.	Dec. 7, '77.	Sick four days. Lived four days. Died from asphyxia. Chloroform.
7. Mitch O'Rorke.	2 years,	Memb. Group.	Recovered.	Chicago.	Dr. E. W. Lee.	March 18, '78.	Sick two days. Removed tube fourth day. Chloroform.
8. James O'Grady.	2 years, 4 mos.	Memb. Group, no membrane visible.	Recovered.	94 Brown Street, Chicago.	Dr. E. W. Lee.	Oct. 12, '78.	Three days sick. Tube worn nine days. Chloroform. Condition: Pulse, 140; respiration, 48; temperature, 103.6°; laryngeal obstruction permanent for eight hours; whispering voice; nasal dilation; retroversion of the base of the thorax marked; slight glandular enlargement. Low operation. Anesthetic difficult of toleration.
9. Albert Caproni.	4 years.	Diphtheria.	Died.	258 Halsted St., Chicago.	Dr. E. W. Lee.	Dec. 9, '78.	Four days sick. Died on 6th day after operation. Exhaustion from blood-polenning. Chloroform well borne. Condition: Pulse, 130; respiration, 36; temperature, 10. c.; laryngeal obstruction present forty-eight hours; tonsils soft; phate and fauces covered with a thick exudate; husky voice; dilated nostrils; epiglottic striking; glandular enlargement in neck. Low operation.
10. Lucy Gray.	3 years, 3 mos.	Cynanche Trachealis Group.	Died.	341 Fulton St., Chicago.	Dr. E. W. Lee, assisted by Drs. Van Buren, Bridge and Landis.	Dec. 27, '78.	Four days sick. Tube worn and lived 26 hours. Cause of death, exhaustion. Chloroform. Condition: "Asphyxiated, death imminent." Low operation. Parents grateful that the operation was done. Should have been done earlier. Diphtheria suspected. Lived sixty hours after operation. Immediate cause of death asphyxia caused by extension of mucous membrane. Anesthetic, chloroform. Impending suffocation at time of operation. Low operation.
11. Lucas West.	3 years, 3 mos.	Diphtheria.	Died.	8 Dearborn St., Chicago.	Dr. E. W. Lee.	Aug. 16, '79.	Duration of previous illness, five days. Tube worn one week. Pulse, 100; respiration, 60; temperature, 103°. Low operation.
12. Aaron West.	5 years.	Diphtheria.	Recovered.	8 Dearborn St., Chicago.	Dr. E. W. Lee.	Aug. 17, '79.	Low operation.

NAME.	AGE.	CAUSE.	RESULT.	RESIDENCE.	OPERATION.	DATE.	REMARKS.
13. Norah Ryan.	2 years.	Meningo. Croup.	Died.	48 Gurley Street, Chicago.	Dr. E. W. Lee.	Dec. 27, '79.	Duration of previous illness, one week. Lived fourteen hours after operation. Immediate cause of death—exhaustion. Anesthetic, chloroform. Pulse, 168; temperature, 103.6°. Low operation.
14. W. Madien.	3 years.	Diphtheria.	Died.	Eighteenth St., Chicago.	Dr. Lee assisted by Dr. Guérin.	Jan. 1, '80.	Duration of previous illness three days. Lived twenty-four hours after the operation. Immediate cause of death, asphyxia. Anesthetic, none. Pulse, less, deeply cyanosed. Respiration almost ceased. Low operation rapidly performed.
15. Alice Green.	3 years. 3 mos.	Diphtheria.	Died.	Blue Island, Ill.	Dr. Lee assisted by Dr. Herman and Kauf- man.	Jan. 19, '80.	Previous illness, eight days. Cause of death, pneumonia. Anesthetic, chloroform. Pulse, 144; respiration, 48; temperature, 103°. Low operation.
16. O. J. Byrne.	3 years. 6 mos.	Diphtheria. Recovered.	W. Randolph St., Chicago.	Dr. Lee, assisted by Drs. W. E. Clark, Nor- man Bridge and son of Dr. Byrne.	Feb. 5, '80.	Previously ill seven days. Tube worn seven days. Anesthetic, chloroform. Pulse, 144; respiration, 64; temperature, 101°. Exudation of membrane over the soft parts of pharynx and tonsils. Low operation.	
17. H. Graft.	7 years.	Diphtheria.	Recovered.	166 Brown St., Chicago.	Dr. Lee, assisted by Drs. McLeenan and Leneman.	April 20, '80.	Previously ill ten days. Tube worn five days. Anesthetic, chloroform. At time of the operation: Pulse, 132; respiration, 48; temperature, 102°. Head thrown back; lips blue; face pale; epigastric retrograde. Two hours after operation: Pulse, 112 tem- perature, 101°; respiration, 36. Breathing with per- fect freedom. High operation.

Name.	Age.	Cause.	Result.	Residence.	Operator.	Date.
1. Einzvahl.	3 years.	Memb. Group.	Recovered.	West Indiana street, Chicago.	Dr. Christian Fenger. Surg. to Cook County Hospital.	Oct. 18, '78.
2. F. Gehrig.	2 years.	Diphtheria.	Died.	Chicago.	Dr. Fenger.	Oct. 25, '78.
3. H. Kenzie.	8 years.	Diphtheria.	Died.	Penn street, Chicago.	Dr. Fenger.	Sept 30, '79.
4. William Archer.	3 years.	Diphtheria.	Died.	Chicago.	Dr. Fenger.	Oct. 27, '79.
5. O. Malkon.	4 years.	Diphtheria.	Recovered.	Chicago.	Dr. Fenger.	Dec. 21, '79.

REMARKS.

Previous illness, three days. Anesthetic, none. Dypoxia urgent. Pulse and temperature high. Tube worn five days.

Previous illness, ten days. Died Oct. 26. Immediate cause of death, "collapse." Condition at the time of operation, "collapsed." High operation.

Previous illness, eight days. Lived four hours after the operation. Immediate cause of death, collapse hemorrhage. Severe dyspnoea, extensive diphtheritis candida. Marked symptoms of blood-poisoning.

Anæsthetic, chloroform. Lived twenty hours. Immediate cause of death, exhaustion. Anesthetic, none. Diphtheritic exudation on tonsils, soft palate and extending into the larynx. Pulse rapid and feeble. Blood-poisoning. High operation.

Previous illness, seven days. Tube worn fourteen days. Anesthetic, none. Tonsils and soft palate covered with diphtheritic exudation. Pulse and temperature high. High operation.

ARTICLE II.

TREATMENT OF DISEASES OF THE LARYNX. By E. FLETCHER
INGALS, M.D., Lecturer on Diseases of the Chest and Physical
Diagnosis, and on Laryngology in the Post Graduate Course.
Rush Medical College.

GENTLEMEN:—Having pointed out in my recent lectures the symptoms and signs which will enable you to diagnosticate diseases in the larynx, I wish this morning to call your attention to the methods of treatment for the most common diseases, which may be best employed by the general practitioner.

IN ACUTE LARYNGITIS,

if the patient is brought to us sufficiently early, our first effort should be to abort the attack; for this purpose it is customary to give at bedtime ten grains of Dover's powder, or from six to ten grains of quinine, or a hot "sling," either one of which will frequently enable the patient to rise in the morning comparatively well; or, instead of these, aconite may be given, or the fluid extract of jaborandi; either will answer much the same purpose as the Dover's powder. Theoretically, jaborandi should be a very valuable remedy in such cases, but generally I have failed to get a good article when I have prescribed it. In a few cases it has acted very satisfactorily, but in others the discomfort which attends its physiological action has been very great, on account of the salivation, and often nausea and vomiting.

A gentleman of my acquaintance once took half a drachm of the fluid extract, and went immediately to bed, hoping to fall asleep before the diaphoresis began. He describes the effects as follows: "In about twenty minutes I felt my mouth fill with saliva, and on rising to expectorate it perspiration started from every pore; my mouth was scarcely emptied before expectoration was again necessary, and this continued until the act became so tiresome that I was obliged to hang my head over the edge of the bed and allow the saliva to run in a steady stream; the sweat poured from every part of my body almost in streams, and satu-

rated the bed clothing; this continued for about three hours, the monotony varied only by occasional vomiting, and at about the end of two hours a cessation in the flow of saliva, which, however, promptly returned when I moved to arrange myself for sleep."

This remedy might doubtless be taken in the daytime without proving so uncomfortable as at night, when the patient wants to sleep.

Failing to abort the attack, you will next resort to remedies which diminish the fever and lessen the inflammation or favor its speedy resolution. With this in view the bowels should be gently acted on by saline cathartics, and you may administer opiates internally in small and repeated doses, giving about one thirtieth of a grain of morphia or its equivalent every half hour, or less frequently, or you may give grain doses of compound ipecac powder, or small doses of other narcotics. Aconite may be given with good results in doses of half a drop every fifteen minutes for a couple of hours, subsequently diminishing the frequency, and increasing the size of the dose to one or two drops every two hours. In view of the danger from oedema, some are in favor of early administering a free purge of calomel, and subsequently using the mercurial in small and frequent doses. The inhalation of steam, or steam impregnated with volatile anodynes, is usually beneficial. The atmosphere of the room should be kept moist, and at a temperature of about 70° F. or 75° F.

With children, the steam from a kettle may be kept playing near the mouth, and older persons may inhale from the spout of a teapot filled with warm water, or from an ordinary steam atomizer. When the patient inhales the vapor from warm water, the addition of some anodyne is desirable, such as one drachm of compound tincture of benzoin, or the same with two to five drops of chloroform, or eight grains of the extract of conium, or a drachm of extract of lupulin rubbed up with half a drachm of carbonate of sodium and a little water, and added to the pint of water at 150° F., or remedies may be administered by the steam atomizer advantageously, as, for instance, two or three grains of carbolic acid to half an ounce each of glycerine and water, or mild astringent solutions with or without small quantities of opium

or belladonna. For these you may employ a couple of grains of sulphate of zinc to an ounce of water, or tannin in about the same proportions, or acetate of lead.

If there is much pain in the throat, or if the person is restless, the amount of opium given internally may be increased, or you may add some of the watery extract of opium or belladonna to the solution which is used for atomization; in many cases the camphorated tincture of opium, or the compound tincture of benzoin, acts very pleasantly, whether used as a vapor in the warm water or as a spray by the steam atomizer.

Strong topical applications cannot be made by the general practitioner, and are of doubtful efficacy, even when properly applied. Strong solutions of the mineral astringents, especially from sixty to one hundred and twenty grains of nitrate of silver, are highly extolled by some physicians, but in the majority of instances patients seem to get along better without them.

If oedema of the larynx supervenes, the case tends to a fatal issue unless promptly checked or relieved. The best method of treatment is scarification of the mucous membrane so as to allow escape of the serum which has collected in the submucous tissues. Scarification of the epiglottis and occasionally the superior portions of the larynx can usually be performed by the general practitioner by the aid of a long bistoury, around which has been wrapped, to within a quarter of an inch of its point, a piece of adhesive plaster for the purpose of avoiding injury to the tongue.

By the aid of the laryngoscope we are enabled to scarify the deeper portions of the larynx more carefully and effectually. This is the best treatment, but where it cannot be practiced the administration of emetics is sometimes followed by good results, due to the act of vomiting which occasionally causes rupture of the mucous membrane.

The fluid extract of jaborandi might be given in some of these cases with benefit. In one instance in which I employed it the oedema was greatly relieved. If efforts to relieve the oedema fail, and the obstruction to respiration increases, tracheotomy will become necessary.

Frequently a subacute form of inflammation follows acute laryngitis, and may continue for a long time. This will require

the application of stronger remedies. The general physician may apply them by means of an atomizer with a long tube properly bent to throw a spray into the throat, the patient being directed to respire deeply, or to sound a prolonged, high-pitched note during the application. For this purpose almost any of the mineral astringents may be used in moderately strong solutions, or various astringent powders may be thrown into the larynx, but these latter are not so desirable as topical applications of strong astringents by means of a brush. For application with a brush or sponge we may use sulphate or chloride of zinc, twenty or thirty grains to the ounce of water, or water and glycerine, or twenty grains of the perchloride or persulphate of iron. One hundred and twenty grains of sulphate of iron, ten grains of sulphate of copper, or twenty to thirty grains of alum to the ounce of fluid, may be used in a similar manner. Some physicians prefer nitrate of silver in solutions varying in strength from twenty to even one hundred and twenty grains, but the other astringents seem to act equally as well, and are less likely to be painful. Counter irritation at the upper part of the sternum or upon the back of the neck will sometimes be found useful.

ACUTE LARYNGITIS IN YOUNG CHILDREN

requires more vigorous treatment than in adults, because of the small size of the larynx, and the greater liability to spasm of the glottis. In treating these cases the warm bath should be used at first to relieve the engorgement of the mucous membrane and tendency to spasm. The atmosphere of the room should be kept moist by steam, and the temperature kept up to 80° F. or 85° F., and when possible the little patient should be induced to inhale steam from the atomizer. Frequently young children become very much alarmed by the atomizer, when brought close to their faces, but they will get some benefit from it though it is placed three or four feet away. A great deal of benefit will frequently be derived from warm applications, care being taken to keep the parts constantly warm and moist. For this purpose poultices of flaxseed are as good as anything, or you may use cloths wrung out of hot water, or spongiopilin with warm water which latter is an elegant application; whichever of these is em-

ployed it must be kept constantly hot, for if allowed to cool it will do more harm than good. If these cannot be kept warm it is much better to apply dry cloths. Turpentine stupes to the neck have also been found beneficial. If there is much tendency to spasm, the compound syrup of squills may be given, or small doses of belladonna, which not only relieve the spasmodic tendency, but possibly have some specific curative effect on the mucous membrane of the throat.

If œdema comes on, you should make an effort to scarify the part, but generally this cannot be effected in young children; failing in this, by passing the finger over the base of the tongue, you will sometimes be able to tear the mucous membrane with the nail, and thus allow the serum to escape. If you cannot relieve the œdema, and the dyspnoea continues to increase, do not hesitate to resort to tracheotomy, which holds out very good chances for recovery.

In a few rare instances of acute laryngitis in young children, the dyspnoea seems to be due to inflammation of the posterior crico-arytenoid muscles, which are the abductors of the vocal cords. The glottis during respiration in health is a triangular chink, but with paralysis of these muscles the cords are drawn together during inspiration, so as to greatly interfere with the ingress of air. In one case of this sort, reported by Dr. J. Solis Cohen, it was found that the application of ice bags to the neck every minute for about eight hours succeeded in inducing reflex respiratory movements, which carried the child over the critical period.

IN SUB-ACUTE LARYNGITIS,

which is the form of affection found in ordinary colds, the treatment is generally attended to by the patient himself; if consulted, you should manage the case as one of mild laryngitis, taking care to prevent exposure to cold, keeping the patient in his room, and applying the milder remedies recommended for the acute affection.

PHLEGMONOUS LARYNGITIS

is a very grave affection, and therefore calls for more vigorous treatment. Early in the disease, the application of leeches along the edge of the sternum, or in the inter-clavicular notch, has

been recommended, and you should at once have recourse to fomentations and the inhalation of steam, more or less impregnated with opium or belladonna according to the amount of distress. Subsequently, the case should be treated upon the supporting and stimulating basis, consisting of nourishing diet, alcoholics, and quinine and iron. The diet should be fluid, and, as the patient will ordinarily be unable to swallow, it must generally be given by enema. Quinine may be given hypodermically, or by enema, if the patient cannot swallow. In this disease, scarification is of little benefit. Tracheotomy is indicated when the patient suffers much dyspnœa, but it is usually fruitless.

IN ERYSIPELATOUS LARYNGITIS

the inhalation of steam is beneficial, and when impregnated with anodynes it will add much to the patient's comfort. Frequently emetics are useful in young children, for the sake of clearing the throat. The most desirable emetic in such cases is alum or the sulphate of copper; alum is usually the best, but neither of them causes subsequent prostration. Benefit has also been obtained in these instances, by causing the patient to hold small bits of ice in his mouth.

Some specialists have found benefit from the topical use of very strong solutions of nitrate of silver.

Tracheotomy is indicated if dyspnœa becomes urgent, but usually it will not save the patient.

TRAUMATIC LARYNGITIS

is an affection which any of you are likely to be called upon to treat, especially that form resulting from the inhalation of steam by young children. The most satisfactory treatment consists of the inhalation of steam more or less impregnated with substances which relieve the smarting, and anodynes used internally or hypodermically, to relieve the pain and restlessness. At the same time the patient should be well nourished, and stimulation may very soon be found necessary. The constant application of bags of ice to the neck, and sucking bits of ice, are also beneficial. Considerable relief from the smarting in the mouth and throat is obtained by the inhalation of atomized solutions of the acetate of

lead, or carbonate of soda. Mucilaginous drinks, as, for instance, flaxseed tea, or barley water, will also be found beneficial. These drinks are frequently very distasteful to the patient, but if acidulated with a little lemon juice, they become quite palatable.

Calomel is recommended in doses of two or three grains once an hour, until relief is obtained. I dislike to give it, but it has the sanction of high authority.

Edema comes on very soon, and if it should cause much obstruction to respiration, tracheotomy must not be delayed, for if it is, the chance of success will be much less, or the patient may suddenly die from suffocation. The edema seldom extends below the glottis, therefore the operation is generally successful if performed sufficiently early; but if the blood is allowed to become surcharged with carbonic acid, the relief afforded does not come soon enough to prevent the cerebral or pulmonary complications which are likely to result from the congestion.

ABSCESSES OF THE LARYNX

are likely to cause death by asthenia or apnoea. The treatment should be supporting from the first, and if possible to reach the abscess, it should be opened; but if this cannot be done tracheotomy should be performed as soon as the dyspnoea becomes urgent.

ŒDEMA OF THE LARYNX.

In this affection ice bags applied to the neck or ice held in the mouth will give considerable relief, and tannin applied in spray, powder, or by the brush, will be found beneficial, but scarification is the most rational treatment, and it has the advantage of giving immediate and usually permanent relief. Chronic œdema is not much improved by scarification, because it usually depends upon a fibrinous instead of a serous exudation. The application of strong mineral astringents is likely to give some relief.

IN SUB-GLOTTIC ŒDEMA,

occurring just beneath the vocal cords, the various topical applications are almost useless. Usually the œdema is due to a fibrinous exudation, so that even if scarification could be practiced, it would be without result. In these cases dyspnoea can only be

relieved by tracheotomy, and subsequently, in the majority of cases, the tube must be constantly worn.

CROUP

may be beneficially treated in much the same manner as acute laryngitis. The patient should be kept in a room with moist atmosphere, at a temperature of about 85°. Hot fomentations may be applied to the neck; emetics are valuable to clear the throat of mucus, and occasionally they aid in detaching false membrane, but only those should be used which have no depressing effects, such as alum, sulphate of copper, or turpeth mineral. Iron and quinine may be needed. Chlorate of potassium seems to have a good effect in some instances, and in others, small doses of the permanganate of potassium have given very satisfactory results. The insufflation or internal use of sulphur has been greatly lauded by the laity recently, and has been tried very generally by the profession, apparently with some success. Inhalations of the vapor from slackening lime, or atomized lime water are often very useful in promoting the disintegration and detachment of the false membrane.

The patient should take these inhalations every twenty minutes or half-hour. Vapor from slackening lime may be obtained by dropping bits of lime into a basin of hot water and holding over it a piece of paper rolled into the form of a funnel, which will collect the vapor and direct it into the patient's mouth, or the basin may be placed near the patient's head, and both be covered with an apron or sheet.

Lime water may be used with the hand atomizer, or better still with the ordinary steam atomizer. If this treatment does not answer the purpose, you should try a solution of one grain of bromine and five to sixty grains of bromide of potassium to the ounce of water, used in the same manner as the lime water; or the two may be used alternately.

The tendency to spasm which nearly always exists in true croup should be met by the administration of opium or belladonna, which will render the disease a little less dangerous. Considerable benefit seems to have been derived in some cases from the application of bags of ice to the neck.

In croup, the results of tracheotomy are not nearly so satisfactory as in acute laryngitis, or oedema following injury to the throat; however, the operation should be resorted to in case dyspnoea becomes urgent. The chances of success will be greatly increased by an early operation; therefore as soon as there is marked lividity of the lips and falling in of the soft parts of the chest during inspiration, tracheotomy should be performed; for unless relief is obtained, death is certain. Be sure of the diagnosis, and then operate early, and you may hope to save from twenty to fifty per cent. of your patients. Late operations are not nearly as successful, and without tracheotomy, about ninety-five per cent. of well-marked cases of croup are fatal.

During convalescence from croup, the patient should be confined to the house for several weeks, and great care be taken that the body is not chilled by changes in the temperature or clothing. If the patient is allowed to go out, a recurrence of the attack is quite probable.

I lately saw a little child, in consultation, who was, at the time, almost comatose from obstruction to the respiration by croupy exudation. The remedies which were being employed, aided by the inhalation of vapors of lime water, had such a beneficial effect that on the following morning the child seemed almost well. The next day the people allowed it to play in the street, and the next day it was buried.

After convalescence from croup, the voice frequently remains hoarse for a number of weeks or months; this is due to subacute inflammation, paresis of the vocal cords, or perhaps to the formation of morbid growths within the larynx. Time usually effects a cure.

LARYNGISMUS STRIDULUS: SPASMODIC OR CEREBRAL CROUP.

During the paroxysm, an attempt should be made to relax the spasm by slapping the back, buttock, etc., dashing cold water in the face, cold sponging, or by the warm bath. After the paroxysm, you must attempt to remove the cause of the spasm, which may be found in the alimentary canal, prepuce, spinal cord, or brain. If you find swollen gums, lance them; if an overloaded stomach, give emetics; if you find the bowels irritated by undi-

gested food, give a dose of castor oil; if there is phimosis and irritation of the glans, circumcise; or if the cause seems seated in the brain or spinal cord, give bromide of potassium.

The affection in children is usually associated with slight catarrhal laryngitis, and the spasm is perhaps most frequently excited by an overloaded condition of the stomach. In such cases, turpeth mineral in doses of one-fourth to one-half grain, or the compound syrup of squills in doses of fifteen to thirty drops every fifteen minutes until vomiting is produced, and subsequently moderate doses of bromide of potassium or oxide of zinc and extract of hyoscyamus, is a prompt and efficient course of treatment. Following the attack, small doses of belladonna will be useful. Iron, cod liver oil, etc., are indicated to improve the general condition.

This disease, especially in adults, is occasionally due to paralysis of the posterior crico-arytenoid muscles, which allows the vocal cords to fall together during inspiration and thus obstruct the entrance of air. In cases of this sort, if they are at all persistent, tracheotomy should be performed to remove the immediate danger, and allow the patient time to recover from the cause of the paralysis. After tracheotomy, the application of electricity, internally or externally, to the larynx, would seem to be indicated, but it has not proven very successful. The administration of tonics, including strychnia, is usually followed by good results.

CHRONIC LARYNGITIS

is usually a difficult disease to manage, because the treatment must be prolonged and the patient is very likely to become discouraged. In mild cases, by attending to the general health, placing your patient under as good hygienic conditions as possible, and administering such simple tonics or laxatives as may seem indicated, you will be likely to get a good result without topical applications. A cure may often be hastened by causing the patient to inhale the spray, two or three times a day, of a mild solution of some vegetable or mineral astringent. Tannin is the most common remedy for this purpose, but sulphate of zinc is a little more pleasant. It should be used in the proportion of about two grains to the ounce of water; or we may employ in

the same manner sulphate of copper, one or two grains; or acetate of lead, two to five grains to the ounce. These remedies are to be used when the amount of secretion is considerable. When the mucous membrane is dry and the secretion scant, we will find good results from a similar application of iodide of potassium, five grains; chloride of ammonium, five or ten grains; or the tincture of pyrethrum, ten minims to the ounce. Water is generally used as the menstruum, though we may use a mixture of glycerine and water. The nascent chloride of ammonium may be employed by any one of the numerous inhalers devised for the purpose.

When chronic laryngitis is attended by pain, the camphorated tincture of opium, or the compound tincture of benzoin, or the watery extract of opium or belladonna, may be beneficially added to the astringent spray. Patients who are being treated by inhalations of warm vapors or steam sprays must not go out of doors for half or three-quarters of an hour after the inhalation.

In case the disease does not yield to this form of treatment, sulphate of zinc, chloride of zinc, or the sulphate of copper, ten to thirty grains to the ounce; sulphate of iron, from sixty to one hundred and twenty grains; or nitrate of silver, thirty to one hundred and twenty grains to the ounce, or some other astringents or caustics, should be applied directly to the inflamed parts with the aid of the laryngoscope and laryngeal brush or sponge. Ordinarily, these strong applications should be made at first every day, for one or two weeks, then every second day, and afterwards less frequently. In the meantime the patient should use at home some of the milder astringent sprays of which I have just spoken. When the patient is obliged to breathe cold air, or air containing irritating dust, the use of a respirator to modify the temperature or filter the air will be found very beneficial.

In some instances the best treatment which can be applied will be found inefficient; then you will have to be content with palliative measures and maintaining the general health in good condition. All cases must receive proper constitutional treatment besides the local applications. Such patients are frequently benefited by change of climate.

When ulceration occurs in simple chronic laryngitis or in the

syphilitic or tuberculous forms, the treatment must be more vigorous. Syphilitic ulcers should be treated by topical applications of the solid nitrate of silver, or very strong solutions; or the acid nitrate of mercury, forty to one hundred and twenty grains to the ounce; or when the ulceration is on the epiglottis, so that it can be reached, the galvano-cautery may prove more efficient. The applications will not need to be repeated oftener than once in two or three days. In the ulcerations due to a simple chronic laryngitis, the same topical applications are indicated as in chronic inflammation without ulceration, but the solution should be stronger and should be applied carefully to the ulcerated surface. In tuberculous laryngitis with ulceration, and dysphagia due to pain, very great benefit may be derived from local applications. For the general practitioner, the simplest local remedies are cod liver oil or sweet oil. When swallowed they bathe the parts more or less completely, and thus aid in preventing the severe pain which would otherwise prevent the ingestion of food. The same remedies may be applied with the brush or probang. The insufflation of certain powders will be found beneficial, and this may usually be easily accomplished by the general practitioner. The insufflator which I have found most satisfactory consists of a rubber bulb attached to a flexible tube about eighteen inches in length, and a glass tube about eight inches in length and three-sixteenths of an inch in diameter, bent within an inch of its extremity nearly to a right angle and made somewhat flaring at the orifice of this bent end. The insufflators found at the instrument stores consist of a metal or gutta-percha tube, bent at one extremity and having a rubber bulb attached to the other. The objection to these is that as the bulb is squeezed, the end of the instrument is unavoidably moved from its position and the powder is thrown somewhere else than where intended. This objection does not apply to the insufflator which I show you. In using it, the glass tube, having been charged with the powder and introduced into the end of the flexible rubber tube, is held between the thumb and first finger of the right hand, and the rubber bulb is held in the palm of the same hand by the remaining fingers, so that it may be readily compressed without affecting the position of the glass tube. In charging the

insufflator the end which is to be inserted into the rubber tube should be passed into the powder, and moved round and round until sufficiently filled ; it is then connected with the rubber tube. To make the application, if you cannot use the laryngoscope, hold the insufflator with your right hand and with the other hold the patient's tongue far out of the mouth, then direct the patient to take a deep inspiration, and during the act pass the tube as far back, and low down into the throat as you can, compress the bulb, and the powder will nearly always be blown directly into the larynx. The powder which will be most beneficial in cases of tuberculous ulceration consists of one grain of morphia to about forty grains of bismuth and ten grains of pulverized acacia ; or, if there is much secretion, you may substitute a portion of the bismuth by tannin or iodoform, or both. When the pain in deglutition is severe, you can give your patient the greatest relief by the application to the ulcer, by means of the laryngeal brush, of a solution of tannin and carbolic acid in glycerine ; I use four grains of morphia, thirty of tannin, and thirty of carbolic acid to the ounce of glycerine. The relief which I have been able to procure such cases by this application has given me more satisfaction than anything else during my professional life. In illustration, I will cite only a couple of cases : A gentleman called on me some time ago, in a most piteous condition, who, on account of the pain, had found it impossible to swallow for a week. Upon laryngoscopic examination, I found a large and deep ulcer on the lingual surface of the epiglottis. I brushed this solution well over the surface of the ulcer, and he returned to me the next day, having eaten his supper and breakfast without the slightest difficulty. I made another application, and then saw nothing more of the patient for about two months. On his return, he told me that he had not suffered in the least since the last application, until the last few days. I made another application, and the patient has not yet returned.

In another case, there was a large ulcer on the ventricular band of the left side, and extending to the inter-arytenoid fold ; the pain being so great on attempts to swallow, that the patient was unable to take either fluids or solids. I made an application which relieved the pain entirely, and made the patient comfor-

table for nearly two days. Subsequently the applications were made nearly every second day, for several weeks, each time giving the patient almost complete immunity from pain, for from forty to forty-eight hours, with the result of allowing the ingestion of food and drink, and prolonging life for a couple of months, until the patient succumbed to the constitutional disease.

ARTICLE III.

THE TREATMENT OF URETHRAL STRICTURE BY THE "PERINEAL SECTION." BY L. RANNEY, M.D.; Adjunct Professor of Anatomy in the Medical Department of the University of the City of New York. Author of "A Treatise on Surgical Diagnosis," "The Essentials of Anatomy," etc.

(Being one of a course of lectures delivered in 1875, before the students of the Medical Department of the University of the City of New York, with some later comments.)

The operation of dividing urethral constrictions through the perineum has long been the resort of surgeons as a means of relieving symptoms, which are not only distressing to the patient but which may often endanger his life. This operation has always been considered one of difficulty, and many of the earlier surgeons, who then cut "anatomically" for the urethra, when narrowed and often-times imbedded in a mass of indurated tissue differing but little from cartilage, had every reason to approach such a procedure with caution and even fear; since the chances of failure were by no means small, if the exposing of the true urethral channel was alone counted as success. In point of fact, the establishment of a channel, no matter what was the direction or the anatomical relations of the artificial passage, so long as it ended in the bladder and would allow of the passage of an instrument, introduced at the meatus urinarius, was a surgical success of which many of the most skillful were proud. Thanks to the discovery of those small whalebone guides, which can be modified, as to the shape of the inserted end, to suit the requirements of the case or the taste of the operator, many of the dangers and difficulties of the operation are now things of the past, and a guide can thus be afforded in almost every case by which the surgeon

may know when he is laying open the urethral canal or simply dividing tissues adjacent to it. I regard this discovery as one of the greatest advances in urethral surgery, of which the present century can boast; since these little instruments can be made, by skillful hands accustomed to their use, to travel the tortuous route of many an organic stricture which was once considered impermeable, and afterwards to afford a true and unerring guide for larger instruments, which are so tunneled as to follow the guide and still be capable of great latitude of movement. The soft filiform guides were but a poor substitute for these little aggressive weapons, since their flexibility was a serious obstacle to their introduction, although a possible advantage after it, and they were often worse than useless, as the skill of the surgeon and that cultivation of touch, which is so useful in the introduction of the one, were wasted in attempts to introduce the other. I have seen good surgeons play one of these deceptive instruments within the urethra of a male, while surrounding students gazed on the tiptoe of expectancy, and, when the face of the surgeon would light up with a gleam which denoted the realization of a triumph, the end of this little joker would appear at the meatus, having doubled upon itself and retraced its steps without informing the friend who had staked his faith upon it. I can conceive of no good surgeon who can to-day rely upon these guides in preference to those of whalebone, unless he be either ignorant of the various devices of which the latter are capable and the general rules for their use, or be so destitute of the perceptions of a cultivated touch that he prefers to trust to the accidental engagement of one of these soft instruments rather than to acquire the skill needed in the employment of the other.

If you will look at the specimens which I present before you, you can easily perceive that the whalebone guides are made of a diameter somewhat smaller than that of a knitting needle, and, were you all as close to me as those on the front seats, you could perceive also that each end is tapered until within a short distance of the point, when an olive shaped extremity is formed by a return to nearly the diameter of the shaft. The object of this bulb upon the point is to afford protection to the mucous membrane of the urethra, and to prevent, as far as possible, the en-

trance of the instrument into the lacunae of the canal, or the ejaculatory ducts.

These guides can be purchased at any of the instrument makers, or can even be made by anyone, expert in the use of an ordinary penknife, by scraping down a split piece of whalebone which can be procured in any country store. Whalebone has the advantage of flexibility, and a certain pliability when placed in hot water which admits of any modification of its form. It also never becomes brittle as does gutta-percha, which is therefore useless for such instruments. This latter property is of great benefit to the surgeon, as by use of heat, the points of these little instruments can be made to assume a bent angle, or a spiral form if demanded, and the application of cold water will make it permanent, until use has again altered it. The filiform bougie, which I have condemned, is now shown to you. It consists, as you see, of a small and very flexible guide, whose weight alone causes it to hang downward, as I hold it in my finger. It is used as an attachable extremity to urethral instruments, being inserted through the stricture and then attached to the end of the instrument which is destined to follow it. The extreme softness of the material of which it is made renders it incapable of doing injury, even if pushed completely into the cavity of the bladder, or of making a puncture of the urethra during its introduction, in spite of the sharpness of its point. It will be shown you in what respects the two instruments differ in their objects, when the tunneled sounds and catheters are presented to you, since, without this peculiar modification of the ordinary sound or catheter, the whalebone guide would be worthless.

I hold in my hand the ordinary sound and the tunneled instrument, in order that by seeing them together, you may have the distinctive characters of each more forcibly presented. The tunneled sound, in the first place, has a hole drilled in its point which opens upon the lower wall of the curve about one-eighth of an inch from the point, thus forming a little canal or tunnel, through which the whalebone guide can pass, if its point be introduced into it. It is important in using a tunneled instrument, that the guide, to be used, be first passed completely through the tunnel, in order to see if its diameter be not too large for the

hole; and also care should be taken to guard against the edges of the orifice in the instrument being sharp, as they may cut the guide and leave a portion of the instrument within the urethra—an accident, which is of a most serious nature. In using a tunneled instrument, whether it be a sound or catheter, the guide is first passed completely to the bladder, and the protruding end of the guide is then slipped through the opening in the point of the instrument and grasped as it escapes from the opposite opening. Thus you have two instruments to handle at the same time; the first being the whalebone guide, which should remain immovable, and secondly, the tunneled sound or catheter, whose end slips along the guide as it passes down the urethral canal. The tunneled catheter is, as you see, a hollow instrument, and has its eye, through which the urine has to escape, placed somewhat farther back than in the ordinary catheter on account of the point being adapted to be used over a guide, while the sound which I have just shown you, is a solid instrument, and is designed alone as a dilator of urethral constrictions.

I have taken the opportunity of deferring the description of these instruments till the treatment of tight strictures should be reached, for the reason that they are specially designed for the relief of such cases, and are of no particular value where the caliber of the stricture will admit a No. 10 instrument; since the point, by that time, becomes so rounded and blunt as to be incapable of doing serious injury, unless force should be used, which can never make up for a lack of skill and which should always be deprecated. When I see any operator use force in urethral surgery, I invariably estimate his skill as of a low grade, no matter how high may be his standing in the profession.

There is another point of practical interest connected with tunneled instruments, which may explain why so many, who use them, make bungling work of it, and often fail in their efforts. I refer to the curve of the instrument. This curve should always be much shorter, and an arc of a much larger circle, than that of ordinary sounds, not to speak of prostatic catheters, whose curve is extreme. The reason for this alteration in the curve is this—that in all periods of the passage of the tunneled instrument, it is of vital importance that the operator be enabled to

control the point of the sound or catheter without having it bind upon the guide and thus be mechanically arrested. Now when the curve of the instrument is a great one, the guide becomes so wedged against the long curve that it becomes impossible to control the point of the instrument in such a manner as to disengage the guide, and the consequence is that the guide is either cut or broken, if force be used, or that further progress of the tunneled instrument becomes impossible.

I have spent the greater portion of the hour in describing to you the instruments used in the treatment of tight strictures, and we can now intelligently study the treatment of the most severe form of stricture which the specialist meets with, viz., traumatic stricture of the deep urethra.

Strictures of this character are commonly the result of bruising of the urethra or laceration of its walls. They occur from blows received in the perineum, from falls upon some projecting bar or pointed instrument which produces injury to the deeper parts, from the injuries received during the employment of instruments by unskillful hands, from rupture of the urethra and the sloughing which usually follows it, and from transverse incisions* in the urethral walls. One of the worst strictures which I have ever met with was originally produced by a kick in the perineum, received during a quarrel; and another was produced by being impaled upon a sharp upright stick, during an attempt of the patient to jump over it. I once saw a case where the king-bolt of a cart was driven completely through the perineum into the bladder, tearing the membranous portion of the urethra and thus producing a most severe type of trouble later on.

It is the rule, after any accident which injures the urethra in its deeper portions, that the amount of induration, in the urethral walls and the tissues adjacent to the canal, becomes so extensive that all attempts at dilatation of the stricture are of no avail. Should the case happen to yield to such efforts, the constant passage of sounds at regular intervals during the life of the patient may keep the canal pervious, and thus save him the risk of a

* It is now well proven that transverse incisions of the urethra tend to create contraction, which is not the case with longitudinal incisions; hence a rule to be followed in all cutting operations, viz.; to divide the urethra in its longitudinal axis.

cutting operation which itself usually requires subsequent care and attention to the seat of stricture to prevent its return. I never advise a patient to become the subject of the knife, whether used within or without the urethra, until the most persistent attempts at dilatation have proven unavailing; as, despite the statements of many to the contrary, I have found the dangers to the patient to be far greater when the knife was used than when the stricture was dilated.* It is for the relief then of those cases, where traumatic strictures have withstood all attempts at dilatation, that the operation which I shall now describe is indicated. I say "of traumatic strictures," since it is seldom, in my experience, that strictures not due to traumatism fail to respond to skillfully applied efforts to bring them up to the normal urethral caliber by the process of gradual dilatation.

In performing the operation of external perineal urethrotomy, with a guide,† the introduction of the whalebone director should be first passed to the bladder; and it is best to have it at least two feet in length, in order to allow of its withdrawal for a short distance, in case the progress of the staff upon it becomes obstructed by its becoming bent, or for other reasons. This same rule applies, with equal force, to all those operations within the urethra, where whalebone guides are used. This step is frequently the most difficult part of the operation, and no time should ever be begrudged, which is used in repeated attempts at introducing it.

Various devices are often required to facilitate this first step, among which may be mentioned the *bending of the point* at an *acute angle* with the shaft, so as to enable the operator to reach all points on the circumference of the urethra by simply rotating the shaft of the guide after its tip rests upon the face of the stricture; giving the inserted end a *spiral form*, so as to worm its way through a tortuous canal; and *filling the urethra* up with these guides, when, by trying different ones, the bladder may be entered and the rest then withdrawn.

* See my article on the dangers of urethrotomy in *N. Y. Med. Jour.*, Aug. and Sept., 1880.

† The originality of the tunneled instrument, upon which the success of this operation so much depends, is a matter of dispute between Prof. Van Buren and Prof. Gouley—both of New York City.

When the guide has been successfully passed, the patient should be anaesthetized and placed in the lithotomy position, with the wrists and ankles tied firmly together. The perineum should be then shaved, as the hairs may get between the lips of the wound and interfere with the complete union of its edges. A staff with a deep groove, and tunneled so as to be passed over the whalebone guide, is now introduced into the urethra and slid down upon the guide, as far as the anterior face of the stricture which is to be divided. This staff should be of as large a size as urethra will admit, and the groove should be sufficiently deep so as to be easily felt through the walls of the urethra, as it is a guide to the operator in dividing the urethra and thus exposing its mucous membrane and the staff which it contains.

Before the incision in the perineum is made, the staff should be entrusted to a skillful assistant, with instructions to hold it so that the groove shall be directed forward toward the operator. The surgeon should sit upon a low stool, so as to be on a plane below that of the perineum of the patient, and the external incision should be made at such a point in the median line of the perineum as to allow the urethra, when reached, to be opened slightly in front of the stricture upon the groove in the staff. The walls of the incised urethra should now be caught up and transfixated by needles threaded with strong silk, and the ends of each thread should be tied, thus forming a loop by which an assistant upon either side, can retract the urethral opening and thus expose the black whalebone guide as it lies in the urethra. The staff should now be withdrawn for a short distance, so as to more clearly expose the orifice of the stricture, and the tissues enveloping the guide should be divided with the instrument which I now hold in my hand; which, as you see, is a small blade, and, upon its point, a blunt olive pointed tip.* This knife can be crowded alongside of the guide within the grasp of the stricture, and then made to cut its way outward. A series of such cuts are often demanded to ensure the complete division of very long constrictions, and the appearance of the whalebone guide throughout the entire length of the wound tells the operator that the

* Called a beaked bistoury.

urethra itself has been opened. The staff is now slid along the guide, and any obstacles to its entrance into the bladder are severed; and, after it enters the bladder the staff and guide can both be withdrawn. All barriers to the escape of urine through the perineal wound should now be carefully divided,* as otherwise, *pockets* may be left which shall tend to create infiltration of the urine into the surrounding parts; an accident which is liable to cause abscess and sloughing.

For the first few days, the urine will probably pass entirely through the wound in the perineum; but, as the wound tends to granulate, the escape will become gradually less, and finally cease altogether. A full sized sound should be passed, at intervals of two days, to the bladder through the meatus; the upper wall of the urethra, which is still intact, being used as a guide over which the point of the sound may be made to pass and thus be directed into the normal passage. This should be kept up until the perineal opening be entirely healed, when the patient should be taught to pass the same instrument and instructed so to do every week at least during the remainder of his life, if he wishes to guard against a recontraction of the stricture. No catheter should be tied into the bladder during the repair of the wound.

It is a point of no small importance that the scrotum should be supported, from the date of the operation until the perineal wound is practically closed, upon a broad strip of adhesive plaster extending from thigh to thigh, and notched in the centre, so as to more perfectly fit the contour of the parts. By this step, the danger of infiltration of urine into the cellular tissue of the scrotum is avoided, and thus a serious and not infrequent complication is rendered impossible.

I have seen fit to read to you, in closing this lecture, the records of two cases from my case book, in order that the average duration of the convalescence may be appreciated, and that the latter danger, which occurred in one of them, may be impressed upon your memories. It must not be inferred, however, that all of the cases so treated recover. I think that the records of a large number of reported cases show a mortality of about five per cent.; and that rigors, abscess, and the imperfect

closure of the perineal opening, make the operation one of no small danger to the patient. It is to my mind a question, however, whether the result of this method of treatment does not afford the patient a better chance of recovery than the operation of internal urethrotomy, when performed beyond the depth of *four inches* from the meatus, as the haemorrhage, which may occur, is more easily controlled, and as the danger of extravasation, which is very great in the internal method, is of rare occurrence in the external method, if the precautions before mentioned are carefully followed.*

G. B. K., thirty-seven years of age. The patient has had one attack of gonorrhœa, some fifteen years ago, but recovered in a short time. Some twelve years ago, he fell with one leg down a coal hole and struck upon his perineum. The parts swelled rapidly and an attack of retention of urine followed, which resisted all attempts then made to relieve it, by the use of instruments, but, after the prolonged use of hot hip baths, the urine was passed spontaneously in drops. During the following two weeks, symptoms of a developing perineal abscess made their appearance, which eventually opened spontaneously, and after the pus was evacuated, the existence of a urethral fistula was discovered. This fistula healed without any special treatment, and the urinary stream gradually increased in size so that the patient has managed to empty his bladder with comparative comfort until within two years, when he began to experience marked annoyance from a constant desire to pass urine and from well marked pain at the seat of his former injury, during the act of micturition.

It was for this condition, and for a stricture which withheld all attempts of his medical attendant, that he sought my advice. An examination of the urethra shows a long and tortuous stricture, situated at six and a quarter inches from the meatus, and associated with marked induration which could be detected through the perineum. A whalebone guide, which had been

* Since this lecture was delivered, I have endeavored to demonstrate to the profession that these views, which I then held, are sustained by the facts. In my article published in the *N.Y. Med. Journal* during the months of August and September, 1880, the deductions showed a percentage of death in the two operations to be about equal, and the ratio of complications, in the operation of internal urethrotomy, to vastly exceed those of perineal section.

given a spiral curve at its inserted end before introduction, was successfully passed to the bladder, but, as the stricture was of traumatic origin and cartilaginous in type, I deemed the operation of perineal section advisable.*

June 8th.—The operation of perineal section was this morning performed (the patient having been kept in bed for three days and my usual preparatory treatment having been followed) (see the record of following case), a staff with a deep groove being passed over a whalebone guide, which had first been introduced to the bladder, as far as the anterior face of the stricture, and the urethra being first opened upon the staff and therefore anterior to the situation of the stricture, and subsequently incised from before backward with a small beaked bistoury.

June 9th.—Through a displacement of the apparatus by which the scrotum was suspended,† a slight infiltration of the urine has taken place into the scrotum, requiring an incision to allow of a free escape of the imprisoned urine, and thus to avoid the extensive sloughing which often follows this accident, unless promptly relieved. The entire contents of the bladder passes through the wound in the perineum, requiring a sponge to be retained over that region by a "T" bandage. A full sized sound was passed to the bladder, the upper wall of the urethra being used as a guide for the instrument. Bowels moved by a dose of castor oil.

June 13th.—No change has occurred since last note, except that the wound has been granulating nicely and that sounds have been passed every other day. The temperature has not exceeded 100, nor have there been any chills or symptoms of nervous disturbance.

July 1st.—The perineal wound still remains open and a slight escape of urine is occasionally perceived from the fistulous tract. Sounds have been passed every other day and the urethra is now dilated to its full capacity. All the symptoms of infiltration of the scrotum have disappeared, and the patient is moving about the house with comparative comfort. The frequency of micturition has ceased so that the urine is retained for the normal periods.

* It is a well known fact in urethral surgery that strictures of a traumatic origin are seldom dilatable, and, if so, are extremely liable to rapidly return to their former condition.

† A broad strip of adhesive plaster extending from thigh to thigh beneath the scrotum.

July 15th.—The wound seems now to have completely closed, and the urine passes completely through the urethra without any apparent obstruction. Sounds are still passed at intervals, and instruction are given the patient to enable him to pass a full-sized sound to the bladder without creating irritation.

July 25th.—Patient is pronounced cured and is instructed to continue the passage of his sound at intervals of seven days, in order to prevent the return of the stricture, as a marked tendency to recontraction is usually present in cases of this character, where the induration of the urethra has been excessive and the cause of the stricture traumatic.

G. S., 27 years of age. Patient has had two attacks of gonorrhœa, but cannot definitely state the year in which they occurred. He is certain that neither lasted more than a month and that they yielded to mild injections.

About three months before he consulted me he fell across an iron bar, striking upon the perineum, but causing no injury to his testicles. An attack of retention of urine followed soon after the accident and continued for some hours, when, at the advice of his physician, he was relieved by the use of injections of hot water into the rectum and of hot hip-baths. Small clots of blood followed the first successful attempts to pass urine, and for some ten days a flexible catheter was passed to the bladder several times a day, as the bladder seemed to act feebly. At the end of this period a small tumor of the perineum appeared, which burst and left a fistulus tract through which urine escaped. A greater portion of the urine however continued to pass through the natural channel, as his physician introduced elastic bougies of gradually increasing sizes, and the patient was finally ordered by his physician to continue the use of the largest size which could then be passed. He however neglected this precaution till the stream became of extremely small size, when, becoming alarmed at the prospect of a return of the attack of retention, and finding the efforts of his physician to again dilate the stricture fruitless, he applied to me for operation.

An examination of the urethra, at this time, showed the following condition to exist: Meatus, very small, admitting only a No. 8; a No. 4 bulbous bougie is arrested at four inches; a

No. 3 bulbous bougie is arrested at four and one-half inches; and nothing but a whalebone guide can be passed from that point to the bladder. The stream of urine is of the size of the smallest bougie, but is projected with considerable force. As the case was one which evidently demanded the operation of perineal section, and as such a step would hardly be justified without a preparatory treatment, save in cases of emergency, I ordered rest in bed, hot hip-baths morning and evening, and the internal administration of the infusion of doggrass, and the iron and bromide of potash mixture, which it is my custom to employ in such cases.*

June 10th.—A large dose of castor oil is given to day, preparatory to the operation, as the patient has now had four days of confinement to bed and the other steps of preparation have been faithfully carried out. A second examination of the urethra to-day reveals very marked induration in the vicinity of the peno-scrotal junction and extending backward into the perineum.

June 11th.—After anaesthetizing the patient, a whalebone guide was passed without much difficulty at the second attempt, a spiral curve being given to the end of the instrument. The meatus required division, in order to allow of the introduction of a tunneled staff of sufficiently large size to be easily felt in the perineum, and a staff corresponding to a No. 10 sound was then passed down till it rested upon the anterior face of the stricture. It was found that the first incision would have to be started about one inch higher up than is usually required for strictures of the deep urethra, in order to open the urethra in front of the stricture, where the groove on the staff acted as the guide to the operator. No special point of interest presented itself save the difficulty in dividing the indurated tissues and exposing the black whalebone guide, which were extremely dense and rendered the wide separation of the edges of the wound difficult. After completely dividing the stricture, the staff was slid along the guide and all obstacles to its free entrance into the bladder divided.

* The infusion of doggrass (*Triticum Repens*) was first brought to my notice by Prof. Gouvy, who had used it for some time as a diuretic. It is given in large doses, and as much as a pint or two being given in twenty-four hours. The other mixture mentioned is as follows:

R. Tr. Ferri Mur. one ounce; Sol. Pot. Brom. (saturated) three ounces; Sig. one drachm in water, after meals. It acts as a tonic and diuretic, and also exerts a special anaesthetic influence on the urinary passages.

The tunneled staff and its guide were then withdrawn, a full sized sound was passed without any obstruction being detected.

June 12th.—Pulse 100; temperature $99\frac{1}{4}$; respiration 20. One ounce of urine passed through the urethra during the night. General condition excellent.

June 13th.—Full sized sound passed to bladder. A slight haemorrhage from the perineal opening occurred last night, which was arrested by digital compression over the wound. Temperature 99.

June 14th.—No urine has passed through the penis since the first night after the operation, probably on account of the swelling of the tissues. The patient has no evidences of fever, and passes urine only three or four times during the twenty-four hours.

June 18th.—Urine now begins to escape by the natural channel; the wound is granulating rapidly. Sounds are passed every other day.

June 19th.—Patient passes almost all of the urine by the urethra, and is able to sit up all day in an easy chair.

June 26th.—Since the last note, the perineal wound has been fast closing, and now little if any urine escapes in that direction. The strength is fast approaching the normal standard and the patient walks about without discomfort.

July 15th.—To-day the patient demonstrated his ability to pass a large sized sound upon himself and is pronounced cured. He is ordered to continue the use of instruments, at intervals of a week, for the rest of his life, to prevent reconstruction of the stricture.

ARTICLE IV.

A CASE OF UTERINE CANCER. By CHARLES T. PARKES, M.D.

Prof. Anatomy Rush Medical College and Physician in charge, and Obstetrician to St. Joseph's Hospital, Chicago.

The fact that Listerism robs abdominal surgery of all its former terrors and fatality, frees the surgeon's mind from great anxiety with reference to such operations and enables him to give favorable prognoses in the most formidable and unfavorable cases

applying for aid, is well established by the results of the practice of such men as Lister, Wells, Keith, Thornton, Volkman, and others.

Antiseptic exploratory section of the abdominal walls, can safely and properly be made use of, in all such cases where external manipulation and examination fail to determine absolutely the condition of the parts affected with disease.

Unrelieved intestinal obstruction and perforating wounds of the abdomen heretofore considered necessarily fatal, will in time be treated by such section for relief with the certainty of complete success following the interference, if done under full antiseptic precautions.

The following interesting case is one of the many isolated examples, all the time coming to the notice of the profession, in proof of the safety and innocuousness conferred by the method of Lister upon abdominal operations, and the successful results of which urge upon the profession the necessity of becoming more thoroughly acquainted with, and more carefully practicing antiseptic procedures.

This history of the case is transcribed from the records as taken by Dr. E. M. Landis, house physician to St. Joseph's Hospital, and confirmed by myself.

Mrs. Anna Eckhart, age 38, born in Germany, married 15 years, and, including three miscarriages, confined eleven times in eleven years—eight living children. No hereditary disease or predisposition thereto in her family that she is cognizant of. Father died at 75 years of heart disease, and mother still living at also 75 years. Grandparents also lived to old age. Up to the time of her present illness, was always healthy, and not unduly exposed by hardship or other conditions, to circumstances favorable to contraction of disease. Weighed 197 lbs. when in health.

The patient was admitted to St. Joseph's, July 11th 1880, suffering from haemorrhages from the womb, with severe pain in the region of the pelvis, a constant discharge of a large amount of foul smelling ichorous pus from the vagina, and other history of malignant disease of the womb.

Digital examination disclosed the upper half of vagina filled with a soft mass of foreign growth as large as an orange, very friable, and easily made to bleed profusely. The finger could be made to pass beyond the growth, along the anterior vaginal wall, into a cavity, the top of which could not be reached. Posteriorly the touch was stopped at the cervico-vaginal junction. The speculum merely confirmed the touch, showing the growth to be cell proliferation from a cavity above into the vagina.

Diagnosis.—Cancer of the uterus, probably growing from the posterior wall of body and cervix, probably epitheliomatous.

Treatment.—Sol. ferri persulphate applied to control bleeding, and repeated irrigation with 1 to 40 solution of carbolic acid to control fetor; tonics and iron to correct anaemia and increase strength. Patient shows well marked cachexia, wax-like ears, quasi-oedematous appearance of the skin.

Previous History of Disease and Treatment.—Up to July 20th, 1879, she had been apparently in good health. Her menses had been regular and orderly until fourteen days previous to the above date. On July 20th, 1879, she had a severe haemorrhage from the womb, and at first thought she was having a miscarriage. Fourteen days later, or at the time of her menstrual flow, she had another severe haemorrhage. From this time bleeding was constant in a greater or less degree, never very profuse, and unaccompanied with pain. Sunday, four weeks previous to Christmas, 1879, she consulted Dr. Geiger, of Chicago, who, after examining her, referred her at once to Dr. A. R. Jackson, of Chicago. Dr. Jackson informed her that an operation was required for her relief.

She was then admitted to the Mercy Hospital, of Chicago, on January 3d, 1880, and on January 8th, at three o'clock p. m., Prof. E. W. Jenks performed some operation about the womb, before the class of the Chicago Medical College.

She says she was told that the Professor removed her womb so completely as to leave remaining only the broad ligaments, ovaries, and a thin portion of the top of the womb, or, as she expresses it, "bis auf die Mütter Trumpeten."

After recovering from the effects of the operation, she returned to her usual duties.

Her menstruation came on eight days after the operation, and seemed normal and regular, until the first week in April, 1880, or about three months after the operation, when a slight haemorrhage and a foul discharge appeared, which, since then, has been constant to the date of present examination, July, 1880. In May, 1880, she first began to suffer pain, which gradually became unbearable without full doses of morphine.

Three weeks previous to admission into St. Joseph's Hospital, she had a third and the most profuse haemorrhage she has yet suffered. Began to lose flesh and strength from the very commencement of her trouble—still she is far from being emaciated.

The patient has consulted Prof. Jenks several times at his office since the performance of the operation.

The patient was very anxious to undergo any operation that promised any relief whatever from her trouble, and expressed herself as feeling convinced that she could not expect any probability of permanent relief unless the womb and its appendages were removed through the abdominal walls. She was convinced that no operation through the vagina could cure her. The patient was thoroughly acquainted with the fact that no operation promised her radical cure; that it was extremely doubtful whether total extirpation could be at all safely performed after abdominal section, owing to the extensive involvement of the pelvic organs in the disease, but that such section could be safely done, and would settle the possibility of relief from a radical removal; and further, some operation, either total extirpation, if warrantable, by means of abdominal section, or curetting away the mass per vaginam, was necessary to give her a period of relief at least from her pain, and septic inoculation from the foul discharge.

She expressed herself prepared to submit to whatever we concluded to do, and after due consideration, on July 22d, 1880, the patient was etherized, and the following procedures carried out under full and complete antiseptic precautions, in the presence of Drs. Gunn, Bogue, Fitch, Fenger, Etheridge, Bartlett, Landis, and others.

An incision four inches in length was carried through the different layers of the abdominal walls down upon the peritoneum.

This being opened, and the intestines pushed out of sight, the following condition of the pelvic contents was found :

Practically, the cavity of the pelvis was found obliterated and filled with a dome-like development of foreign growth, which occupied all the irregularities of that cavity, and reached to an elevation on a line with the inlet of the pelvis. Posteriorly there was no cul-de-sac of Douglas. Centrally the entire body of the uterus and its appendages were intact, and raised aloft upon the undergrowing mass of cancerous infiltration. Laterally the mass was as high as the pelvic brim. Anteriorly the top of the bladder only was visible. Several enlarged glands of considerable size were found laterally and posteriorly.

An attempt to remove any such mass of disease was clearly unwarrantable.

The abdominal incision was closed by interrupted sutures and gauze dressings applied with retentive bandage. The patient was then placed in Sim's position, the vagina well opened and retracted, and the foreign mass as completely removed as possible with the scissors, curette, finger and Pacquelin cautery. All friable tissue within reach was carefully and radically scraped away. Thanks to the cautery, this was accomplished with extremely little haemorrhage.

This operation cleared the vagina entirely, leaving a very shallow rim of what seemed to be a remnant of the cervix uteri at its upper termination. Above the vagina was left an immense cavity, the anterior wall of which seemed to be formed by the posterior wall of the bladder, as the sound in the bladder could be easily located by the finger in the cavity ; the roof was formed by the parts already seen and felt through the abdominal walls ; posteriorly the finger in the rectum could be located through the cavity. The patient had not a single unfavorable symptom after these surgical procedures, either of which is entitled to an appellation of more gravity than usually goes with the word "simple." On the eleventh day she was out of bed, and on the twelfth she walked down stairs. The abdominal wound healed firmly without any local trouble except a little irritation around one of the lower sutures. The patient improved in strength and appetite, and had no pain and no foul smelling

discharge. This improvement was only transient, however, for during the month the discharges again became offensive, and the pain returned, so that now, September, 1880, although suffering less than previous to the operation, and although less offensive to herself and others, the signs are none the less positive that the disease is steadily progressing and will be fatal in its issue.

The parts exposed by the abdominal section were examined by several of the gentlemen present, and all remarked the natural and healthy aspect of the body of the uterus, including certainly a small portion of the cervix, as the broad ligaments were intact. Evidently the body of the uterus had never been encroached upon nor invaded by the disease, which had seemingly developed in and about the cervix, and in its development pushed everything else before it.

Since performing the above operation, much to my surprise, I find that the operation performed upon this patient in Mercy Hospital on January the 8th, 1880, has been classified, and referred to in a number of medical periodicals, as one of *recovery* from total extirpation of the uterus per vaginam. Such reference to this successful and radical operation may be found in the *Chicago Medical Gazette*, No. 3, February 5th, 1880, page 55; also in the report of Mercy Hospital Clinics, March 5th, 1880, No. 5, page 116 of same journal; also the last number of Braithwaite's *Retrospect Gynaecological Reviews*.

Any statistics based upon such report will, of course, possess more than the usual unreliability belonging to an array of figures used to back up any positive course of treatment, or from which conclusions may be drawn.

THE valuable papers abstracted in this JOURNAL from proceedings of the American Medical Association, on "Rest after Delivery" and "Treatment of Peritonitis," were from the pen of Dr. Tauksyn.

Foreign Correspondence.

ARTICLE V.

Messrs. Editors :—The traveler who desires to study the nature and habits of the various populations of Italy, must travel through certain parts of Lombardy, or Venice, and stop to visit the homes of the country people, examining carefully the physiognomy, acts, and words of those who assemble together on festival days at the church of the village. He will thus be astonished by the strange contrast that reigns between the marvelous fecundity of the surrounding country and the misery that is everywhere apparent. The condition of the miserable cottages, the feebleness of the workingmen, their saddened physiognomy, their slow and tired movements, their serious and melancholic conversation distinguish the agricultural population, and show that, in these places, life is truly sad and full of privations. On the other hand if he has traveled through other parts of Italy, an entirely different contrast is presented to his sight. Elegant and commodious dwellings, surrounded by gardens, provided with all the beauties of nature, happy people, healthy, strong, joyous, songful, and playful, present a contrast so great, that he will not fail to ask the occasion of this monstrous anomaly. This notable diversity which for ethnographic reasons ought not to exist, is explained by the nature of the economic conditions to which the people are subjected. The day workman, always the poor servant of the glebe, is poorly lodged, badly clothed and insufficiently remunerated. His labor does not suffice to feed his family, whose spare diet consists wholly of Indian corn meal mush. Every day the organic balance of the poor classes closes with a deficit, and these daily deficits accumulating, result in impoverishment. Little by little the forces fail, all the functions of the

body become enfeebled, and the effects of chronic famine are manifest in the terrible *pellagra* which closes the mournful scene. By it the country is depopulated, and the hospitals, the insane asylums, and the cemeteries filled. Italy is the classic country of pellagra. The first study of the disease was made by Dr. Casal, in the year 1735. He called it *rose disease*, from the color that the patient's skin acquires, principally on the dorsum of the hands. A. Pajati studied it about the year 1740 and named it *Alpine scurvy*. In 1740 the pellagra was so much diffused through Italy, that many works on it were written, among them those of Frapolli, physician of the Hospital at Milan. At that time a hospital was founded by Dr. Scambio, exclusively for the treatment of pellagra, wherever this disease prevailed. The extensive cultivation of maize or Indian corn was recognized, and this article was found to be the exclusive diet of that class of inhabitants among whom pellagra became developed. From this it was concluded that Indian corn was the prime cause of the disease. But special conditions are most always present at the crisis of the disease, such as fatigue under the heat of the sun; filthiness of persons and houses; frequent use of acrid oils and irritable vegetables, as garlic and onions; lastly, the scarcity of meats, milk, wines, etc. In 1830, the number of patients affected with this disease in Lombardy alone, amounted to over twenty thousand. In 1856 the number increased to thirty thousand. In 1880 eighty thousand were registered, and in all Italy Dr. Lambroso assures us that no less than five hundred thousand are affected with pellagra. What is to be done to put a stop to this horrible plague? The pauperism of the agricultural class should be remedied in order to remove the cause, and till this is done thousands will fall victims to the pellagra. The Government in this matter can accomplish much.

Some cases of Bright's disease were brought to the clinic this year. In six, the course of the disease has been followed with exactness, noting the daily quantity of urine and albumen, the other principal phenomena and the influence of the various methods of treatment. Special methods were tried, and some of the remedies being quite new, deserve attention, more especially as regards their effects, since the treatment of Bright's disease often improved the condition of the patient and arrested the morbid pro-

cess. Chronic Bright's disease, untreated, generally does not improve ; therefore it must be excluded from the category of those diseases that sometimes present spontaneous relief. It was noted by Prof. DeRenzi that the patients in the first days after their entrance to the clinic, or when the treatment is interrupted, readily secrete a greater quantity of urine. But there are some exceptions. Fuchsine, recently introduced in the treatment of Bright's disease, produced a sensible diminution of albumen. In clinic it was used under two forms, diluted with water and added to an extract in pillular mass, each of two and one-half centigr. As the intense coloring of the water with fuchsine is objectionable, the pill form is to be preferred. The daily dose of fuchsine may be far greater than that thus far advocated in the treatment of the disease. Ordinarily a small dose of five centigr. was gradually increased to twenty-five centigr. in twenty-four hours. No remarkable physiological action of the fuchsine on the principal functions of the organism has been discovered. According to the dose, the urine commences to present a more or less reddish tint, persisting during all the time of treatment. Generally the latter acquires such a tint about five days after administering the remedy, and loses it about three to five days after suspending the fuchsine. Very often in Bright's disease the urine shows some mucus, and then the fuchsine is of great benefit, the mucus disappearing from the urine. The mucous membranes of the digestive tract become intensely colored by the drug, and the plasma of the blood shows a well-marked coloring. The quantity of haemoglobin in the blood, and the chromometric grade were examined with the apparatus of Bizzozero, and it became evident that the chromometric grade corresponded to a quantity of coloring matter in the sanguineous plasma, which far surpassed the proportion of haemoglobin. Evidently, therefore, the more intense coloring is not due to an augment of haemoglobin, but rather to the dissolution of the fuchsine in the blood. Many consecutive observations have confirmed, according to Prof. DeRenzi, the efficacy of fuchsine as a remedy for Bright's disease. In exceptional cases, where fuchsine does not avail, its presence in the urine is wanting, and the red coloring notably absent. Therefore, when, after some days of treatment with the fuchsine, the urine does not become red, the existence of some obscure alterations of the kid-

neys must be admitted. Besides fuchsine, other methods have been used, mainly repose in bed, as efficacious means of diminishing the increase of albumen, and to this is added the milk diet. Apomorphine has been generally well tolerated and prescribed in higher doses than those ordinarily given, five to six centigr. daily without the least disturbance. In one case under this remedy the patient's state ameliorated considerably. As a therapeutical remedy the Professor had used the haemoglobin prepared by Grinon, according to the process of Dr. Lebou, for the treatment of globular anaemia and the absence of haemoglobin in the blood. So far the observations have been insufficient; but in one case the red blood corpuscles had considerably increased after the use of the haemoglobin.

Piperine and oil of *eucalyptus globulus* have been largely tried for intermittent fever and tumor of the spleen. The former was largely advocated by Celsus, Dioscorides, Müller, Franck, Alt-döfer, Riedmiller, Pettagua, etc. The action of the latter has also been studied by Weber, Gubler, Ullersperger, Tristany, Lambert, Lovinser, Kesser, Mossler, and Gimbert. But the observations in clinic did not furnish such good results as those lauded by these authors, having been found far inferior to those of quinine. As a great number of practitioners attributed either to the piperine, or to the eucalyptus taken separately, a strong anti-febrile action, the two remedies were used together. The formula of Mossler was preferred, that recommended for the the treatment of leukæmia, that is both remedies combined in pill form, each pill consisting of one drop of oil of eucalyptus and four centigr. of piperine. The efficacy of the eucalyptus associated with the piperine was soon confirmed, but yet did not equal that of quinine. The results were good, however, and the Professor did not hesitate to admit that the two combined remedies, eucalyptus and piperine, were the most potent articles next to quinine.

Just at this moment of closing, my eye has fallen on the following in the "Caffaro," of Genoa: "Naples, 11th. Yesterday in Fontana dei Serpi, on Pendino Street, a woman, called *Concetta la Pavattiera*, gave birth to six little creatures, four dead, and two living!"

A. LAGORIO, M.D.

CHIAVARI, Italy, Aug. 14, 1880.

Domestic Correspondence.

ARTICLE VI.

NEW YORK LETTER.

Messrs. Editors:—There is a young man over in Brooklyn by the name of Livingstone, who is trying to outdo Tanner. He claims to have fasted before, and to have shown his physical endurance by walking some thousands of quarter miles in an equal number of quarter hours. He has not as yet attracted the attention of the public; neither has the medical profession shown any interest in his performance, although the opportunity to get a name in the papers is too good to be long neglected. But the people are tired of Tanner and his ways; and no amount of exhibitions will ever make one meal a day popular in New York. The once immaculate Tanner, by the way, went into a grocery store last week and weighed himself. He tipped the scales at 157 pounds, which is only half a pound less than before his fast. Finding himself so thoroughly recovered, he advertised a lecture in Booth's theatre on "What I know about Fasting." He was introduced to a thin audience by a medical Eclectic light of the name of Gunn. Dr. Tanner then delivered himself of some choice diatribes against all doctors in general, and regular doctors in particular. He would have all his audience give up medicine forever and recuperate on oxygen, water and animal electricity. Dr. Tanner, I should judge, has much vituperative power and a very lively scientific imagination, and neither the absence of solid food or of professional sympathy can curtail his infinite vivacity. It is much to be hoped that he will now marry Miss Mollie Fancher, the fasting girl, and go into a trance.

The last hot wave left our city a week ago, and the cool breezes are now bringing back our doctors and their patients. New York seems to empty itself into the country more and more every summer; and at the same time to have more people than ever to stay and take their chances with the sun. By August, it may be a decided misfortune if one who remains in the city falls suddenly in need of a doctor. A case in hand has just been told me. Dr. A went out of the city and left his patients with Dr. B.; Dr. B left his with Dr. C, and Dr. C was suddenly called away and left the whole lot to the gentle mercy of nobody in particular. A patient of Dr. A's was taken ill; she sent around to A and B and C; of course to no purpose. She then sent for a fourth physician, who was also out of town, and finally to a fifth who sent back word that he was just on his way to catch the train and could not call. By this time the lady was quite comfortable and concluded to get along without a doctor.

The mortality in New York has, like the heat, been something extraordinary. The ordinary mortality rate of the city is a pretty high one, being from 25 to 28 per 1,000. In the week ending June 12, it was 25.13; then it began to rise. In the week ending June 26, it was 44.97, while the reported mortality for the week ending July 3, was 56.20 per 1,000. This is a very much larger rate than occurs in any other city in this country or abroad, so far as statistical returns show. There were during that week 1,297 deaths, of which two-thirds were of children under the age of five years, and one-half, of children under the age of one year. About two-thirds of the children that died lived in the tenement houses. But it is a somewhat singular fact that the proportion of deaths in these houses was not greatly changed. That is to say, about two-thirds of the deaths in the city occur in the tenement houses all the year round whether it is hot or cold. It shows that the great cause of the deaths is the intense heat, and that a baby is not much safer from it up on Fifth Avenue than down in the slums about Mulberry Street. A great deal is done by the city and by charitable people to give the children relief, and the sea-side sanitaria, the free excursions into the country and upon the water, are among the best known and most useful of New York's many charities.

We are just now having a few innovations. The city has established a night medical service, so that strangers or any one needing immediate medical help can be at once supplied. The names of about 300 physicians have been sent in to the Police Board. These have been divided into smaller lists each one including all the physicians living in a single precinct. The lists are posted in the various police stations and if a person is taken suddenly sick in the night he sends them for a doctor. The fee for a night call of this kind is \$3. In Paris, where the service originated, and where it is said to have proved useful, there are, I believe, ten or twenty calls every night. This is not a very large number for two millions of people, and New York cannot expect so many even as this. The new service is not likely to enrich the physician very much, and it is very doubtful whether humanity demanded it. New York is pretty well peppered with physicians everywhere, and most of them are willing enough to respond to night-calls. Nobody can go to a police station (provided he knows where it is—which few do) without passing half a dozen doctors' signs at least. The New York Night Medical Service has a humane and sonorous sound, but it appears very much like a piece of supererogation. However, it may succeed, in which case Chicago can benefit by the example.

Another little performance, which we are now carrying on, is that of registration. The work of signing the name, taking an oath, and paying from twenty-five to seventy-five cents, according to each doctor's special gullibility in the hands of the county clerk, is proceeding very briskly. It must be finished by October 1, but there are still 1,500 or more doctors to register and only two weeks to do it in. There must be some left over; and then there will be a wail over the \$20 fine incurred. The measure is a popular one among regular physicians, as it obliges every man who hangs out his sign as a doctor to show his authority for doing so. This he does by swearing that he has a diploma or license from a reputable college or chartered medical society. Of course anybody can swear to this, and it must depend on others, who are on the watch, to find him out. We expect our county medical society to do the work here, and I have a great deal of confidence that they will do it well. There are some very active

and wide-awake men on the censorship committee. If the city officials stand by the law, it is to be expected that there will be lively times among the charlatans, abortionists, magnetic doctors, etc., of the city. The Homœopathic Medical College has, it is rumored, done a very magnanimous thing. The new law provides that hereafter any person who comes into the State to practice must first have his diploma or license examined and endorsed by some regularly incorporated medical college in the State. For this indorsement the sum of \$20 is to be paid. The Homœopathic Medical College offers to furnish this indorsement for nothing! Whether this is pure benevolence, a desire to advertise, or an ambition to increase the adherents of homœopathy in the State I dare not say.

I wrote sometime ago about a novel rhinoplastic operation which Dr. Sabine performed upon a patient at Bellevue Hospital. The boy had lost his nose, and to replace it, the middle finger of the left hand was sewed on and then amputated from the hand. I have seen the boy since. He is still far from handsome, but the finger stays on and the general health is good. The tip of the finger failed to unite, however, and after the amputation there was some suppuration and part of the first phalanx necrosed and came away. So that the end of the new organ lacks something of the rounded symmetry of nature. And as a whole it has a little of a foreign air; it does not seem to feel thoroughly at home in its new surroundings. But "Tommy," the patient, is pleased and has confidence in the nose of the future and the efficacy of future operations. It is intended to sew up the top of the nose again, to construct some nostrils and add various other little touches in the interests of plastic surgery, high art and of a most exemplary patient.

The colleges are beginning their annual courses and medical students are pouring into town, gladdening the heart of the boarding-house keeper. Bellevue Hospital Medical College began its regular term Sept. 15, and it continues for six months. The University Medical College begins its preliminary course on the 15, and its regular course Oct. 1. This is the only one of the three large colleges which has shown no regard to the now general demand for longer annual courses, and more of them.

It sticks to its old system, and perhaps deservedly, has the reputation of sending out the biggest and the worst medical classes every year. But it will have to yield bye and bye. By chance, I have learned of several country physicians who have heretofore been in the habit of sending their pupils to the university. They now intend to make a change and send them elsewhere. The college has excellent instructors, and is as well equipped as its rivals; but it ought to show a higher ambition than that of graduating the largest class of doctors in the city. The College of Physicians and Surgeons has done something in the line of higher education. Its annual course is now seven months, instead of five, lasting from October 1st into May. It recommends in italics that all students attend three courses of lectures, but it has not the moral courage to compel the plan, and its adoption of a long course rather indicates that it does not intend to do anything of the kind.

There has sprung up in the last three or four years something like a new industry, in the line of medical education. It is the system of "cram-quizes." For many years there have been two or three physicians—oftener a less number—who have taken students intending to compete for the positions in the hospitals, and have put them through a six months' "cram," working them at the highest possible pressure. This method turned out, at the end of the half year, young men so thoroughly informed in every point, so ready and well drilled that the ordinary student had no chance against them. It gradually became a necessity, in order to get a hospital position, to go through a "cram-quiz." The fee for half-a-year's cramming was \$100; and if the quiz-master had a dozen or two pupils, as he generally did, the profit was a very respectable, though a well-earned one. Quizzing having thus become profitable, has now become very popular. Where there were only two or three notices on the bulletin-boards, there are now a dozen. The number of pupils has largely increased also. This is partly because there are more hospital positions than formerly, and partly because many of the quiz-masters take students and cram them for the college examinations only. The quiz system is, of course, liable to abuse, and occasionally a student gets permanently injured by the strain

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it puts upon him. They often cause a neglect of the didactic lectures also, which is not, however, always a misfortune. But whatever the danger of abuse, it cannot be doubted that there is nothing which compels study, trains the attention, and disciplines the memory like a cram-quiz, if, as is generally the case, the preceptor is alive and the pupils are ambitious. It is a fact useful to be noted, in the cause of higher education, that in the competitions for the hospitals, competitions in which the best men of all the colleges enter, those who have had a previous academic training almost uniformly come out ahead. Five-sixths of the house-staffs on the large city hospitals are bachelors or masters of arts. In these days, when the practical value of a classical education is so often doubted, I for one am glad to furnish a little evidence in its favor.

NEW YORK, Sept. 15, 1880.

Le Journal d'Hygiène, according to the *Revue Médicale Française et Etrangère*, reports three cases of absolute but temporary impotence arising from the use of salicylate of sodium, the dose being only from three to four grams in the twenty-four hours.

Says the *Journal d'Hygiene*: "These attacks on virility are the more important as without our knowledge we are daily taking the salicylate of sodium in our food and drinks, as in the butter, beer, wine, preserves, and that a man may thus unconsciously do a serious injury to his wife. If the fact is confirmed, the salicylate of sodium will become a source of disorder in the family."

DR. MARY J. MERGLER has returned to the city, after a year's study at the University of Zurich, and has entered upon the practice of her profession. She has also resumed her work at the Woman's Medical College, as Assistant to the Chair of *Materia Medica* and *Therapeutics*. The valuable quality of her work in the field of histology has been appreciated in this city.

Reviews and Book Notices.

ARTICLE VII.—NEURALGIA: ITS NATURE AND CURATIVE TREATMENT. By THOMAS STRETCH DOWSE, M.D., F.R.C.P., Edin. London: Bailliere, Tindall & Cox; 1880.

This work is offered as the second volume of a series on "Diseases of the Brain and Nerves," the first volume of which, on "Syphilis of the Brain," appeared during the past year and has, we believe, been republished in this country. Its inclusion in this series seems to have been an afterthought of the author, who in a manner apologizes for the fact. As regards the scope and style of the work, he says: "If the reader expects to find, in the following pages, any vague and speculative theories relative to the pathology of neuralgia, he will be greatly mistaken. Yet the author hopes that the reader will find therein the great question relative to the practical and curative treatment of neuralgia discussed in a simple, comprehensive and concise manner."

His ideas on the pathology of the disease are, however, vague enough if not speculative; they seem to be based on Romberg's epigrammatic saying that it is "the prayer of the nerve for healthy blood," a statement altogether more rhetorical than scientific, and one which, however captivating it may sound, is a very inadequate expression of the true facts of the pathology of neuralgia. Our author defines neuralgia as "a diseased condition of the blood and tissues of the body, and a condition which causes a more or less definite and localized painful affection of the nerves." This is certainly vague and inaccurate enough, and we do not find, in the succeeding paragraphs, any good evidence of very clear ideas on the real conditions in neuralgia. The author's disclaimer, therefore, of any special claims as a theoretical path-

ologist is well supported, and his characteristics in this respect are noticeable throughout the book.

On the practical side of neuralgia the author is much more satisfactory. He follows a very elaborate classification of the forms of neuralgia, giving illustrative cases under each head, with some generally very sensible and practical remarks on each variety. We notice here, however, what is perhaps an excess of faith in the treatment employed, nearly every clinical history being headed "cured by" this or that remedy. His treatment is also in some particulars what would be deemed in this country heroic; thus he advises one-fourth or one-half of a grain of morphia with one-twentieth or one-fortieth of a grain of atropia for a hypodermic injection, and one-half to one grain of morphia for a single beginning dose internally, without any caution or specification as to idiosyncracy or previous accustomation to the drug. But the reader will find this part of the book—and it really amounts to about the whole of it—full of useful, practical suggestions, some of which may be novel. The work is on this account well worthy of perusal and we recommend it, not as supplanting, but as supplementary to other more scientific treatises on its subject.

H. M. B.

ARTICLE VIII.—A MANUAL OF SURGERY. By T. FAIRLIE CLARKE, Assistant Surgeon to Charing Cross Hospital. Wm. Wood & Co., 1879.

This, as the title implies, is a handbook for the general practitioner, and contains a little of everything pertaining to surgery.

The book is thoroughly revised and improved by an American Surgeon, whose additions here and there bring the work fully up to date.

The additions are inclosed in brackets and consist mostly of familiar subjects to the students of the past few years; such as Esmarch's bandages, Sayre's plaster of Paris jacket, Buck's apparatus for fracture of the thigh, Sayre's dressing for fractured clavicle, Lister's antiseptic method; Bigelow's litholapaxy, closing with a whole added chapter on transfusion.

This closes the series of works comprised in Wood's Medical Library for 1879.

The whole set fulfill the promises which heralded them and are really marvels of cheapness and excellence. The binding is of uniform taste and strength and looks well on the shelves. Several of the numbers are classical in excellence, and have passed through several French and German editions. They have been received by the profession, and reflect great credit upon the judgment and enterprise of the publishers.

W. L. D.

ARTICLE IX.—OFFICIAL REGISTER OF PHYSICIANS AND MIDWIVES TO WHOM CERTIFICATES HAVE BEEN ISSUED BY THE ILLINOIS STATE BOARD OF HEALTH—12 mo. Weber & Co., Springfield, State Printers, 1880.

The Register reflects great credit on the efficient Secretary (Dr. J. H. Rauch) of the State Board of Health. It contains a copy of the Act to Regulate the Practice of Medicine in the State of Illinois, and a copy of the Act to Create and Establish a Board of Health in this Commonwealth, and a Register of Physicians, Regular, Homœopathic, Eclectic, Botanic, Physico-Medical, Thompsonian, and Midwives, arranged by counties, giving the date of registration, school, residence, age, nativity, total years of practice, etc., of each physician arranged by counties and alphabetically. We have examined the Register carefully so far as the regulars are concerned, and find it a marvel of accuracy.

The State Board of Health certainly deserve credit for the thoroughness with which they do their work, and we hope the State legislature will see proper to enlarge their powers so that they may succeed in the laudable undertaking of elevating and purifying the medical profession.

D. R. B.

ARTICLE X.—A TREATISE ON FOREIGN BODIES IN SURGICAL PRACTICE. By Alfred Poulett, M.D., Inspector of the School for Military Medicine at Val-de-Grace. 2 Vols. Wm. Wood & Co., 1880.

This unique work contains a vast amount of information on a subject hitherto unnoticed in this form. The author has collected from every source, chiefly from the large number of cases reported hitherto in medical journals from all parts of the world, his own ample experience and that of his colleagues, cases of all

kinds of foreign bodies in every cavity of the body, their diagnosis, prognosis, and treatment. In the description of each body and its location, the character of the secretion is considered, the viscous in which it is lodged, and its influence upon the intruder. Some of the well-authenticated cases he details, especially of foreign bodies, in the urinary and genital tract are almost incredible. The author's dry comments upon them are amusing. A more novel and interesting work seldom appears.

ARTICLE XI.—A CLINICAL TREATISE ON DISEASES OF THE NERVOUS SYSTEM. By M. ROSENTHAL, Professor of Diseases of the Nervous System at Vienna. With a preface by PROFESSOR CHARCOT of Paris. New York : Wm. Wood & Co.; 1879.

This classical work has run through three large German and French editions since 1870, and has met with extremely favorable criticism everywhere. It is exhaustive and thorough, especially in the practical departments of symptomatology and therapeutics. In this respect it is especially adapted to the wants of the general practitioner. The author uses hydropathic treatment in many chronic nervous diseases in simple and moderate methods, and pays much attention to medical electricity both for diagnosis and treatment. The work is translated by Dr. M. Putzel of New York, who has introduced a number of very serviceable wood-cuts at appropriate places. The two volumes are included in Wm. Wood & Co.'s Cheap Series for 1879.

ARTICLE XII.—MATERIA MEDICA AND THERAPEUTICS—VEGETABLE KINGDOM. By CHARLES D. F. PHILLIPS, M.D., F.R.C.S.E., Lecturer on Materia Medica, Westminster Hospital. New York : Wm. Wood & Co.; 1879.

Another reprinted English work edited by an American author, the well known Henry G. Piford of New York City, who has adapted it to the American pharmacopœa and sufficiently condensed it to bring it within the limits of the series in which it appears. A few unimportant articles are omitted to make room for newer and more useful drugs, as jaborandi, gelsemium, iris versicolor, etc. Both apothecaries' and metric weights are given,

the latter in brackets. The work is indexed, both as to remedies and diseases. The second portion, devoted to drugs of inorganic action, is nearly ready for the press.

W. L. D.

ARTICLE XIII.—THE SURGERY, SURGICAL PATHOLOGY AND SURGICAL ANATOMY OF THE PELVIC ORGANS. With commentaries, notes, and cases. By Henry Savage, M.D., London, etc. Wm. Wood & Co., Standard Medical Library, 1880.

This work of only 129 pages, is profusely illustrated by thirty-two excellent plates, each containing from four to eight different illustrations, supplemented by thirty-two wood cuts giving diagrams of the pelvis and its contents in every possible section, with minute dissections of each tissue in its anatomical and surgical relations. The operations for ruptured perineum and ovariotomy are graphically illustrated in each stage. In the latter the author has frequently assisted Mr. Wells, the celebrated ovariotomist, and is a colleague of that gentleman. While some of the author's theories, in the glimpses he gives us of them, may be peculiar, still the book is admirable in just what the title announces, the Surgical and Pathological Anatomy of the Pelvis.

ARTICLE XIV.—INFANT FEEDING AND ITS INFLUENCE ON LIFE; OR, THE CAUSES AND PREVENTIONS OF INFANT MORTALITY. By C. H. F. ROUTH, M.D., M.R.C., P.L.

The author gives the result of many years of painstaking observation. He is evidently in love with his work ; and there is not a neglected detail or a question one might ask but is answered. The book reads easily, is well indexed, and provided with an appendix full of English and French statistics of infantile mortality.

ARTICLE XV.—DISEASES OF THE INTESTINES AND PERITONEUM, comprises a collection of monographs on enteralgia, enteritis, obstruction of the bowels, ulceration of the bowels, cancerous and other growths of the intestines, diseases of the cæcum and appendix vermiciformis, colic, colitis and dysentery, diseases of the rectum and anus, intestinal worms, peritonitis, tubercle of the peritoneum, carcinoma of the peritoneum, affections of the abdominal lymphatic glands, and ascites, by a number of noted

English writers, form also a volume of 247 pages in Wood's Medical Library. The articles, for the most part, are terse and interesting, though one or two are in rather old style. No practitioner will be disappointed with the time spent over the book.

BOOKS AND PAMPHLETS RECEIVED.

BOOKS.

Index Catalogue of Library of Surgeon General's Office, U. S. Army; Vol I. Washington; 1880.

Organic Materia Medica. By L. E. Sayre, PH.G. Detroit; 1880.

Treatise on Therapeutics; Vol. II. By A. Trousseau and H. Pidoux. Translated by B. F. Lineslee, M.D. Wood's Library; 1880.

The Skin—in Health and Disease. By L. D. Bulkley, M.D.

The Brain as an Organ of the Mind. By H. C. Bastian, M.D., F.R.S.

Functional Nervous Diseases. By L. Putzel, M.D. 1880.

Dose Book and Anatomist. By C. H. Leonard, M.D. 1880.

Geo. P. Rowell & Co.'s American Newspaper Directory. 1880.

Practitioner's Hand Book of Treatment. By J. Milner Fothergill, M.D. 1880

Contributions to Orthopedic Surgery. By J. C. Hutchison, M.D. New York; 1880.

Tumors of the Mammary Gland. By S. W. Gross, M.D. Philadelphia; 1880.

The Microscopist. By J. H. Wythe. Philadelphia; 1880.

Diseases of Women. By Graily Hewitt, M.D. Philadelphia; 1880.

PAMPHLETS.

Seventeenth Annual Report of New York Society for Relief of Ruptured and Crippled. May, 1880.

Case of Probable Abscess of Brain. By Frank Allport, M.D.

Iritis and Some of its Dangers. By S. J. Jones, M.D. (Reprint.)

Fifteenth Annual Report of Chicago Hospital for Women and Children. March 1, 1880.

Transactions State Medical Society of Arkansas, fifth annual session. 1880

Pregnancy Vomiting. By J. Marion Sims, M.D.

Report of Indiana State Health Commission. 1880.

Anæsthesia by Ethyl Bromide. By H. Augustus Wilson, M.D.

Lunacy Reform. By E. C. Seguin, M.D.

Peptonized Milk as Food for Infants and Invalids. By R. J. Nunn, M.D.

Practical Hints Relating to Yellow Fever Prevention. By R. B. S. Hargis, M.D.

Minutes of Twenty-fourth and Twenty-fifth Annual Meetings of Kentucky State Medical Society. 1879 and 1880.

Reports and Resolutions Relating to Sanitary Legislation.

Lacerations of the Neck of the Uterus. By A. R. Jackson, M.D.

Eleventh Report of State Board of Health of Massachusetts. 1879.

Transactions Medical and Chirurgical Society of Maryland. 1880.

Proceedings of Connecticut Medical Society. 1880.

IN the *British Medical Journal* for Dec. 25, 1875, is recorded a case of diabetes insipidus successfully treated with ergot, after the failure of jaborandi and other remedies. Half a drachm of the fluid extract of ergot every three hours reduced the urine in twenty-four days from twenty pints to a pint and a half; increased its specific gravity from 1.002 to 1.017; and removed the excessive thirst and other distressing symptoms of over two years' standing.

A few days ago the reporter of the case accidentally met the patient, who told him he had never had a day's illness since he left the hospital four and a half years ago; his urine was normal in quantity, and he did not suffer from thirst. He was strong and well in every way, and able to do a good day's work.

Editorial.

THE AMERICAN MEDICAL COLLEGE ASSOCIATION.

Since the last annual meeting of the above named association, which was held in New York about the first of June, 1880, its position in relation to the progress of medical education and its prospects for the future, have been commented on by many of the medical journals in different parts of the country. These comments related chiefly to the action of the association in relation to the colleges requiring attendance on three regular annual courses of instruction before graduation, and to the withdrawal of certain Eastern schools from membership. The adoption of the amendment to the articles of confederation by which all the college members become pledged, not only to exact three years of professional study, but also attendance on three regular annual courses of college instruction before graduation, to become operative in 1882, was a very important step; and appears to have elicited only commendatory notices from the medical press.

It is true that the *St. Louis Clinical Record* offered some criticisms. They were not against the movement itself, however, but simply against the postponement of its practical operation for *two years*. The voluntary withdrawal from membership in the association, of the two most influential medical colleges in New York, and the intimated withdrawal of the Jefferson School in Philadelphia by its representative in the last meeting, thereby leaving the membership of the association almost wholly west of the Alleghanies and within the great interior valley of the continent, has evidently taken many of those connected with the medical press by surprise, and has led to much inquiry for the reasons actuating the withdrawing colleges. When it is remembered that

the representatives from the College of Physicians and Surgeons, and the Bellevue Hospital Medical College (the two New York schools recently withdrawn), were among the most active in originating the association and in framing its constitution and articles of confederation, it is not surprising that their withdrawal before the completion of the fourth year of its progress, should create not only surprise in the minds of others, but much curiosity to know the reasons for such capricious action. Indeed, it is difficult to see how the colleges concerned could consistently or honorably withdraw without assigning true and adequate reasons for such a step. Yet we do not learn that any reasons whatever have been given by either of the colleges alluded to. But while the withdrawing colleges are themselves silent in regard to reasons for their action, *The Medical Record of New York* for August 14th, attempts to give some very singular reasons for them. After admitting that the association had "certainly done some good work;" that its claims to having secured progress as regards medical education in several important directions, "are to some extent just;" and finally, that it "has had the courage to take the step of insisting upon *three* full courses of lectures as a requisite for graduation;" the editor with apparent reluctance adds:

"But in spite of all this evidence of earnest endeavor after reform, we find that none of the *largest* medical colleges are working with the association. Not one of the colleges of Philadelphia, New York, or Boston, were represented at the meeting, [in New York] except the Jefferson Medical College, and its delegate *failed to vote* for the resolution requiring a three-term course. The College of Physicians and Surgeons of this city, [New York] and the Bellevue Hospital Medical College, withdrew from the association altogether. It is composed, therefore, now, for the most part, of the smaller medical colleges *scattered* throughout the West and South. This disaffection of the Eastern colleges, has, we fear, an unfortunate significance. If we interpret it rightly, it means that the association can do them no good, and that they do not have faith in the possibility of securing any great reforms in medical education through its influence. There certainly is some reason for looking at the matter in this

light. The association is composed largely of colleges which really cannot subscribe to certain most desirable measures without ceasing to exist. One of these reforms—one perhaps of least importance—is that of raising the lecture fees. An attempt to make a rule on this point at the last meeting failed utterly. There is very sharp competition among some colleges, and one form which this takes, is the practice of underbidding each other in the matter of fees. This practice which is very demoralizing, the association cannot stop. Another reform which is greatly needed is the insisting that a medical college should furnish a certain amount of clinical instruction. But there are a good many country colleges, where a rule enforcing even a small minimum could not be carried out. The fact is, therefore, that a high minimum of requirements for graduation—a minimum embracing all points desirable to secure a thorough medical training—can never be applied to all American colleges, and can never be adopted by the college association without a fatal loss of membership. A minimum that would perhaps elevate and benefit small colleges would be inadequate for the institutions of the great cities."

There are several points in the foregoing quotation, from one of the most candid and enlightened of our contemporaries on the Atlantic border of our country, worthy of notice. The first is the very complaisant manner of assuming that all the largest medical schools in the country are centered in Philadelphia, New York and Boston; and as these have ceased to act with the American Medical College Association, the latter is now composed for the most part of "the smaller medical colleges scattered throughout the West and South." This kind of assumption of superior importance—greater size—and more perfect development of everything on our Atlantic borders, is characteristic of Eastern writers and talkers. They so habitually speak and write of the schools, colleges and cities of the West and South as "provincial," "small," "scattered," etc., as compared with the metropolitan character of those in the East, that we have often wondered whether they have ever studied the geography of their country, or cast a glance over the census statistics of the last two decades. Is it possible that the editor of the *Medical*

Record has not yet learned that a large majority of the people of the United States live west and south of the Alleghany mountains—that within the Mississippi valley alone, there are four or five cities each containing from a quarter to over half a million of inhabitants, with schools, medical colleges and hospitals, that will not suffer by the most rigid comparison with those in the largest cities in the East, and, moreover, that all these medical colleges are still members of the American Medical College Association? The truth is that the oldest medical college in Chicago, which was founded less than forty years since, has a class of students much larger than that of either the Pennsylvania University or the Harvard College at Boston, and only a little less than that of either the College of Physicians and Surgeons or the Bellevue College in New York, or of the Jefferson College in Philadelphia; and the aggregate number of medical students annually attending the medical colleges in Chicago, Cincinnati, St. Louis, Louisville and New Orleans, is very nearly equal to the aggregate of those attending the medical colleges of Philadelphia, New York, Brooklyn and Boston. And even if our Eastern confrére should turn his attention to the medical colleges in the smaller towns and cities "scattered throughout the West and South," could he find one, even in the most remote frontier settlement, with a smaller class in attendance than that which annually assembles in the medical department of old Yale, or with an annual college term of less than sixteen weeks, like that of Dartmouth and others in New England?

The next point worthy of notice in the foregoing extract from the *Medical Record* relates directly to the reason assigned for the withdrawal of the Eastern colleges, namely: "that the association can do them no good and that they do not have faith in the possibility of securing any great reforms in medical education through its influence." Without stopping to comment on the purely selfish motive implied in the first line of this quotation, let us try to find out what "great reforms in medical education" the writer and the colleges for which he speaks have in mind, and then we can more readily see whether the lack of "faith" spoken of is justified by anything in the past history of the association or not. The reader will see that the only measures of "great

reform" actually mentioned in the *Record* are: first, "that of raising the lecture fees," and second, "the insisting that a medical college should furnish a certain amount of clinical instruction." In regard to the first, he says an attempt to make a rule on the subject of fees at the last meeting of the association "failed utterly." In looking over the records of the last meeting as published by the secretary, the only allusion we find to any attempted action on this subject is in these words: "On motion, it was resolved that, in the judgment of this association, the minimum lecture fees should be seventy-five dollars." How the adoption of such a resolution, expressly stating what ought to be the *minimum* for lecture fees, constituted an utter failure we leave for the *Record* to explain. But what has been the influence of the association over this subject of fees?

At the time of completing the organization of the association in 1877, with the exception of two colleges in St. Louis and one in New Orleans there were no medical colleges in the interior valley from the Great Lakes to the Gulf of Mexico whose lecture fees did not range between twenty and sixty dollars; several gave two graduating courses each year, and at Louisville there was a college faculty running a medical college under two names, the term of one following the other so as to enable any student to attend his *two* college courses and graduate in *nine months*, and at the same time inviting students by circulars sent into every Congressional district in the country to come on pretended free scholarships, paying only some nominal incidental fee instead of regular lecture fees. Starting with this state of things, the organization of these colleges into the American Medical College Association, with the resulting personal contact of their several representatives, their better acquaintance, clearer perception of mutual interests and greater confidence in each other, in the three short years that have elapsed, the double headed nuisance at Louisville has been completely broken up; not a single college continues to give two courses counting for graduation in one year, and every college of note or material influence, except the Medical Departments of the State Universities of Michigan and Iowa, from Detroit to New Orleans, has increased its lecture fees to seventy-five dollars. Could the editor of the *Record* or any other

party reasonably ask for better progress in the same time, so far at least as concerns the colleges of the West and South? And yet not a college in either of these sections has withdrawn from the association on account of this advance on the subject of lecture fees. Is it not possible, however, that if the editor of the *Record* would make thorough search into the relations of things nearer home, he could find something relating to *fees* that might have had an influence on the action of the New York colleges? The double headed Kentucky-Louisville college "out West," was not the only college in the United States that sought to gather in large classes by issuing an undefined number of scholarships and liberal provisions for beneficiaries, if the signs of the times and the annual announcements do not lie, one of the *largest* colleges in the *largest* city in the East, called the Medical Department of the New York University, is in the habit of making both these methods available to a very liberal extent. The character of the very first *topic* taken up for consideration in the convention of college delegates held in Philadelphia in 1876, as well as the stringent nature of some of the articles of confederation relating to the same topic, adopted at the meeting in 1877, taken in connection with the active part performed in framing those articles by the representatives of the College of Physicians and Surgeons of New York, and of the Bellevue College, justifies, at least, the suspicion that a strong, underlying motive for the movement was a hope or expectation that the New York University would be drawn into the membership of the Association and thereby forced to abandon its plausible, indirect underbidding processes or suffer open disgrace. And is it not just possible that the failure of the last named institution to come into the organization, by which it maintained its own freedom while its immediate neighbors had placed themselves under additional restrictions, was really the efficient cause of their speedy loss of *faith* and their hasty retreat from an organization they had been so active in forming? We wish to call the attention of our brother of the *Medical Record* to another item closely related to the foregoing. All of the *smaller* medical colleges of the country are not "scattered throughout the West and South;" but there are still quite a number in the old States of Vermont, New Hampshire, Maine and

Connecticut, and there has long existed a relation between some of these schools and those of the great cities of the East by which facilities for the graduation of students were afforded almost equal to that of the former Kentucky-Louisville institution.

For instance, the medical department of Dartmouth, New Hampshire, has a short annual term of from fourteen to sixteen weeks, commencing early enough in the season to end about the time that the schools in Boston and New York commence, so that the student can take his first course there and his second course and graduate in one of the great cities, by an almost continuous college attendance of about *nine* months. Or he can go to the Long Island Hospital Medical College in the *great* city of Brooklyn, and attend its course commencing in the spring, and to one of the great schools in New York or Philadelphia the following autumn and graduate, having completed his *two courses* of college attendance all in twelve months. This nice arrangement for facilitating the making of doctors was blocked so far as the members of the American Medical College Association is concerned by the article of confederation requiring the lapse of, at least, fifteen months between the beginning of the first and the end of the second course of lectures the student is required to attend. Another of the articles of confederation bound the members of the association to require of each candidate for graduation evidence of having studied medicine *three full years*, which was designed to stop the common practice long followed in the larger colleges in the great Eastern cities, of graduating students who had attended two courses of lectures, but who had not studied medicine a day over eighteen months. We ask again, if it is not possible that finding themselves likely to be restricted by these wholesome regulations while their immediate neighbors, the New York University, the Harvard College, etc., remained free, had much to do in helping to dissipate their *faith* in the benefits to be derived from the association?

If, after due investigation, our New York confrère should find these suspicions to which we have given utterance, well founded, we hope he and others will hereafter cease to make the smaller medical schools "scattered throughout the West and South" the scape-goats for all the sins committed under the head of medical

education. The second reform mentioned by the *Record* as desirable, but which it is alleged the members of the college association could not carry out, on account of the numerous smaller medical colleges scattered throughout the country, was that of providing adequate *clinical instruction* as a part of their regular system of teaching. We admit that there are a considerable number of small medical colleges both in the East and West (quite as many in proportion to the population in the former as in the latter), that have no adequate means for clinical instruction. But this, instead of furnishing an excuse for withdrawing, or standing aloof from membership in the college association, is one of the strongest reasons why such an association should be sustained. And if the old and well established medical colleges in the great Eastern cities, Baltimore, Philadelphia, New York, Brooklyn, and Boston, would at once enter the college association and unite with the colleges that are already members, in Detroit, Chicago, Cincinnati, Louisville, St. Louis, and New Orleans, not only in honestly maintaining the steps in advance already taken by the association, but in adding two others, namely, a just and proper standard of preliminary education on the part of students, and the furnishing of adequate *clinical instruction* in hospitals sufficient for the purpose, they would not only give it efficiency and permanence, but they would also cause it to be sustained by the whole body of the profession, including the county, State, and national medical societies, together with the State and national boards of health and boards of examiners. The only members that would be lost to the association by such a step, would be such as ought to be lost to the world by ceasing to exist, and whose loss would be "*fatal*" to no one but themselves. This part of the subject, however, is of such paramount importance as to require thorough discussion; but we have already occupied so much space that we must defer further comments until the November number.

Original Translations.

ON THE NATURE AND PATHOGENY OF MALIGNANT JAUNDICE, ACCORDING TO RECENT WORKS. By ALBERT MATHIEU, interne des hôpitaux (Paris).

(Translated for the CHICAGO MEDICAL JOURNAL AND EXAMINER by H. D. VALIN, M. D., Chicago.)

Dr. Rendu, in an excellent article in the *Dictionnaire de Dechambre*, appropriately gave the study of malignant jaundice the first place in the pathology of the liver. In fact, malignant jaundice is no longer considered a well-defined disease, existing *per se*, but as a set of symptoms met in several affections.

"We do not look upon malignant jaundice as a special disease, but simply as a complication which may take place during the course of any disease of the liver, a common ultimate phase of any degeneration of that gland, which may yet result in a cure." (Rendu.)

This is very different from the signification formerly given to the term malignant jaundice, or to its synonyms, hæmorrhagic, typhoid, fatal icterus, acute yellow atrophy of the liver.

The essential disease formerly described under that name does exist, but its only characteristics are a rapid course, a toxic cause, probably, and anatomically a quick destruction of the active elements of the liver. These symptoms and pathological lesions can all be found in a variety of pathological conditions, with a more or less chronic course. The nervous phenomena, hæmorrhages and prostration, are symptoms common to many affections. Shall we say, however, that the complexus of symptoms are indifferently produced in all general and local diseases affecting the liver, without a corresponding and pathogenic cause being found in that viscus? On the contrary, works lately pub-

lished aim at demonstrating that the sum of the phenomena referred to have always their origin in the same lesion—the destruction of the liver cells, whatever the cause of such a destruction may be. In the same manner that a relaxation of the vascular system results from various affections of the heart, malignant jaundice is the last result of destructive diseases of the liver. Let us now add another important character. It seems that the suppression of liver cells is not the first step, although that was the opinion held at first, as it is even yet by a few. It is more likely the result either of a deep change in the organism, manifested by a pathological change in the blood, or a formative process ending as it were in the mechanical suppression of the active elements of the liver.

This view concerning malignant icterus clearly results from a perusal of late works on the subject. The article of Dr. Rendu in the Cyclopedic Dictionary, the chapter on acute yellow atrophy of Thierfelder in Ziemssen's Handbook, and the inaugural thesis of Dr. Mossé, have been our chief guide. Their interesting perusal incites one to think that science actually tends to strengthen that pathological point, and although some obscure corners remain, one can form a satisfactory general idea of the phenomena designed by the terms malignant jaundice or yellow atrophy.

We must presently explain these improper terms. Jaundice is not a necessary concomitant of the suppression of liver cells, and the chief features of the complexus of symptoms, haemorrhages and cerebral manifestations, have nothing to do directly with the absorption of bile in the blood. The importance of the morbid phenomena is not at all in ratio to the intensity of the jaundice. Some medical writers, struck by the marked diminution in the size of the liver, and taking such a degeneration as pathognomonic, called acute yellow atrophy, this affection named by others malignant, fatal, essentially haemorrhagic icterus, etc. But malignant jaundice may be present without any atrophy of the liver, or when the latter is atrophied, if the diminution in size is produced very slowly. It is necessary, however, being agreed on that point, to continue to give to that sum of symptoms now the name of malignant jaundice, and now that of

yellow atrophy. We prefer the former term, although the icterus may be absent sometimes, rather than to conjecture as to the true nature of things.

It may be proper, to facilitate the understanding of this review, to give here the plan which we propose to follow, or, rather, the consecutive propositions which might form a conclusion to this article.

1. The absorption of the constituents of bile in the blood is not apt to give rise to malignant jaundice, and, accordingly, theories based on cholemia, acholia, etc., are groundless.

2. Neither is malignant jaundice due to uremia, and, should the kidney have something to do with the pathology of that complexus of symptoms, it is not of a primary importance.

3. The destruction of liver cells is the only anatomical characteristic. This destruction may be produced under the influence of widely different causes, which may be divided in two chief classes—mechanical and toxic. The former produce a slow destruction of the active elements of the liver, the latter a quick destruction.

4. There exist, however, as demonstrated by phosphorus poisoning, transitory forms between slow and mechanical destruction, and the rapid destruction depending on a toxic cause.

5. The peculiar state of the blood and the existence of epidemics show that a general poisoning precedes the hepatic atrophy, in genuine cases, in the same manner that the absorption of phosphorus precedes the signs of poisoning by that substance.

6. Malignant jaundice, contrarily to what has long been the common belief, may terminate in a cure.

The physicians who first described malignant jaundice have been impressed by two phenomena chiefly—the presence of jaundice and the constant occurrence of lesions in the liver. Very naturally, they gave the jaundice the greatest importance. Its appearance, indeed, most frequently precedes the occurrence of nervous manifestations and haemorrhages. Hence, the hepatic lesions must have been influenced by the jaundice, the bile retained in the secreting canals, or, secreted in excess, dissolving the liver cells. (Henoch, von Dusch, Rokitansky.) This, how-

ever, was proven to be false. (Robin, Kühne, Wickham Legg.) The bile, no more than the biliary acids, has not the natural property to destroy the liver cells.

It was supposed that the constituents of bile introduced or retained in the circulation would produce on the blood a particularly poisonous effect. Hence, the symptoms were attributed to cholemia (Piorry), choletoxemia (Lebert), acholia (Frerichs). It has been demonstrated that, although the presence of bile in the blood is not harmless, it is not capable of producing malignant jaundice.

Researches in experimental pathology demonstrate that it is impossible to give rise to malignant jaundice by artificially introducing bile into the blood, even in a large quantity, provided, however, that the bile be well filtered. Finally, very significant pathological facts prove that there is no necessary connection between the jaundice and the nervous accidents.

Malignant jaundice may supervene towards the end of common cirrhosis, even if the latter has progressed unaccompanied with jaundice (Thierfelder). It is a question, however, why those nervous phenomena are not developed more frequently in cases of intense and prolonged icterus, why, in a word, all cases of jaundice do not have to a certain extent the typhoidal aspect, if cholemia sufficed to explain cerebral disorders.

The theory of acholia cannot be sustained, because the biliary acids do not pre-exist in the blood. Not only are they excreted, but they are also secreted by the liver.

Moleschott, Lehman and Kunde, after removing the liver in frogs, and keeping the animals alive during several weeks, have not found biliary salts in their blood.

Is there a resorption of bile after secretion and bile-poisoning?

Such a poisoning might be dependent on the coloring matter, the biliary acids, or cholesterine.

For what relates to the coloring matter, it is more and more generally admitted that bilirubine, the prototype of the various coloring matters of bile, is derived from haemoglobine, that beside a little modification the blood and the bile, pigments are the same. The chemical demonstration of that point is imperfect as yet, although very clear in a clinical point of view, and it is from

that circumstance and from that identity in nature that the theory that icterus arises from hæmaphæin (the brown coloring matter of the blood) was founded, and it has been sustained in France by Gubler, and ably exposed by Dreyfus Brisach in his inaugural thesis. *Hæmaphæic* icterus may often accompany grave affections as a result but not as a cause.

Are the symptoms of malignant jaundice depending on biliary salts as some pretend? They have been injected in a large quantity into the blood without giving rise to characteristic nervous phenomena. This was the result of the experiments of Traube, Müller, Felz and Ritter, Vulpian, etc. Whenever the injection is considerable, the results hardly differ from those obtained by injecting water; or at times symptoms pertaining more to simple jaundice are produced: slowness of the pulse, lowering of the temperature, emesis, diarrhoea. At times haematuria appeared, and sometimes ptyalism.

In any case, biliary salts must be reckoned harmless. Their presence in the blood cannot determine the occurrence of malignant jaundice.

Icterus may long exist without malignant jaundice, as extensively proven by Dr. Strauss in his admission thesis. Whenever malignant jaundice supervenes in the course of chronic jaundice, it is indirectly, and through the inflammation of the biliary canaliculi, and through the interstitial hepatitis resulting therefrom, as is the case in hypertrophic cirrhosis. These accidents must again be referred to the inflammatory and destructive process rather than to a simple resorption of bile.

It remains to examine the hypothesis of cholesteræmia proposed by Dr. Austin Flint.

According to that author, the symptoms of malignant jaundice would be owing to the retention and the accumulation of cholesterine in the blood. In a normal state, in an adult, the blood contains 0.445 gr. to 0.750 gr. of cholesterine. In a case of cirrhosis of the liver, with nervous manifestations, he found 0.922 gr., in another case 1.850 gr. Pagés also found 1.85 gr., and Picot 1.864 gr.

Cholesterine has been injected into the blood and has never reproduced the grave manifestations of malignant jaundice.

Pagés and Felz obtained only negative results. R. Müller has determined a weakening of the pulse and even coma: the cholesterine which he used being porphyrised and undissolved so that cerebral emboli were probably produced.

It seems now well demonstrated that malignant jaundice is not caused by the absorption of the biliary constituents in the blood. This is obvious from physiological experiments and still more from the true existence of the symptoms of malignant jaundice without icterus. Not only is its absence met in chronic cirrhosis, and slowly destructive affections; but Bamberger has recorded a case of acute yellow atrophy without jaundice (*Krankh. des Chylopoë. Syst. 2 Aufl. p. 532*). It referred to the case of a woman thirty years old who was seized with delirium and mania on the day following her confinement. The autopsy revealed an acute yellow atrophy of the liver far advanced; hardly a few cells had remained intact. Similar facts have been recorded by Eppinger and Liebermeister.

What neither bile nor its constituents can do may be produced by urea, according to others. We thus approach the renal theory of malignant jaundice lately sustained by Dr. Decandin.

Because renal lesions are frequent, even in simple jaundice, it does not follow that the nervous manifestations should be attributed to uræmia. It is doubtless very important to have healthy kidneys, capable of eliminating the bile absorbed in the blood; it is doubtless very useful to have a sieve to filter the leucine, the tyrosine and the other noxious substances apt to occasion poisoning, but it is going too far to consider the kidney as the starting point of the symptoms of poisoning, and above all to identify malignant icterus with uræmia.

Dr. Decandin resumed towards the last of his thesis, the objections to the uræmic theory; it was helping the critic, still he does not seem to have answered these objections.

Albuminuria does not accompany malignant jaundice; nor is the temperature lowered. There is no œdema nor puffiness of the face, no albuminuric retinitis, nor hypertrophy of the heart.

Moreover, the convulsive fits of uræmia do not resemble the crises of malignant icterus in which hardly any eclampsia is noticed.

In malignant jaundice, delirium, nervousness, later stupor and coma are prominent. Says Traube: the fits have something "psychiatric."

Two very curious observations might form a basis to the uræmic theory. One is from Dr. Vallin, the other from Dr. Bouchard.

In that recorded by Dr. Vallin, there were all the signs of malignant jaundice though the autopsy revealed no lesion of the liver, while the kidney on the other hand, presented a marked degree of fatty degeneration. This at first sight seems very demonstrative. Nevertheless, hepatic lesions, appreciable to the eye or the microscope, have been wanting in several other observations. It does not prove that the liver cells were intact, for Dr. Quinquand has recently demonstrated in a similar case that the tissue of the liver, healthy in appearance, showed a large quantity of leucine and tyrosine when chemically analyzed. It is very interesting to join the result to what was already known of the appearance of those extractive matters in the liver as well as in the blood and the urine.

It seems in reality, and ulterior experiments are likely to confirm such results, that the chemical lesion is the leading one, and that the hepatic cells have been physiologically suppressed, although their morphological texture did not seem altered in the least.

The observation of Dr. Bouchard is very instructive. It shows the possibility of curing malignant jaundice. In the first stage the elimination of urea was strikingly increased. In a second stage the urine and the urea had been notably diminished and the nervous manifestations of malignant icterus appeared. At last the cure was ushered in by a marked increase in the quantity of urine and urea, a critical phenomenon which has also been observed since by Mossé, Arnould, and Coyne. This fact, however, can hardly be brought to uphold the theory of uræmia. Indeed, cases are not rare which, at first presenting an augmentation of urea, later showed a marked diminution; but there was probably a greater diminution in the production of urea than in its excretion. And this agrees well with what Meissner, Brondell, and Murchisson have taught concerning the office of the

liver in the production of urea. During the period of active congestion, there is an excess of urea produced; during that of atrophy, it disappears.

Arnould and Coyne lately analyzed the blood in malignant jaundice and found the quantity of urea diminished. Then it may be admitted that although uræmia may accompany malignant icterus, it is not identical with it, and Rendu and Vulpian rightly claim for the kidney an important, yet accessory and secondary office, in the pathology of malignant jaundice. Dr. Decandin brings to the help of his theory the researches, full of interest, of Julius Möbins. This observer found, chiefly after prolonged jaundice, some biliary coloring matter accumulated in the tubuli, and degenerated epithelium in the convoluted tubes. But nothing indicates that these lesions ever determined nervous phenomena similar to those of malignant icterus, although this would be the important point to be proven.

A very satisfactory observation of Dr. Rendu can be found at the end of Dr. Mossé's thesis, under the head of aggravated jaundice. A man sixty years old was suddenly attacked with prostration, and three days later with jaundice. A comparatively large quantity of albumen was found in the urine. This latter was greenish, leaving a muco-purulent deposit. Patient fell in a low stage, dying with asthenia. Liver was normal; there was a pyelo-nephritis with increase in the size of the kidneys. There is a fine example of the result of icterus in a man whose kidneys were out of order. But as Dr. Rendu remarked, this was not a genuine case of malignant jaundice. The same could be said of other forms of aggravated icterus.

This leads us to place in the first rank the lesions of the liver, whose nature and pathogeny are now to be explained.

We borrow from Dr. Mossé an effort at a classification of the lesions of the liver. Little need be added to it to show that there is an insensible gradation from the lesions of typical, acute yellow atrophy, and those of chronic atrophy, of the cirrhosis of Laennec, passing through acute diffuse interstitial hepatitis.

"*First Period.*—Congestion of liver, increase in size, a lobular aspect appears on cutting. Tumefaction, anomaly. (The lesions

observed in all malignant fevers). Disease may stop here, or pass unobserved, patient recovering.

“*Second Period.*—The consistency and the size of the liver begins to diminish in a general way, and in equal proportions. The hue, on cutting, is more or less yellowish and marbled. The normal granular aspect is lost.

“Anaemia of the parenchyma, haemorrhage at times. The microscope reveals tumefaction and anomaly. Appearance of fatty globules and sometimes of biliary pigment in the interior of cells; some begin to take on atrophy, others may even be entirely disintegrated; protein granulations. The interlobular space is increased (albumino-fibrinous exudation, Frerichs), containing at times some fatty globules, some lymph corpuscles (Severi) or embryonal nuclei which form new connective tissue.

“Should the course of the disease be rapid, and death take place before the lesions of the secondary period become very marked, the liver would appear normal or almost so, chiefly when observed with the naked eye. (These are the conditions in which Dr. Quinquand has found an accumulation of extractive matter in the substance of the liver, well calculated to prove the existence of a real lesion.)

“*Third Period.*—Macroscopical and microscopical lesions of acute yellow atrophy at its maximum. During this period, as described in a former quotation, we may find on examining fresh slices with a microscope all the intermediary stages between the normal liver cells and the atrophied cell in process of disappearance, crystals of leucine and tyrosine are also met with. These products of disassimilation may exist during the preceding period. Appearance of new elements in the midst of connective tissue, the nature of which is not yet ascertained, which probably serve for the regeneration of liver cells.

“*Fourth Period.*—A tendency to reparation. Reparation of past disorders. Facts are wanting to answer with precision whether it is complete or limited.”

Although this classification be artificial to some extent, although we know nothing of the period of reparation, and we do not know even if the lesions of the third period can be repaired,

it gives with a good deal of truthfulness the sum of the lesions found and their habitual succession.

But the share referred to interstitial hepatitis is certainly too narrow, not because this increase of cellular tissue between the lobules has been very often observed, but because it shows, when well marked, the passage from acute to chronic atrophy. This leads us to think that if interstitial hepatitis is not more common, it is because it is not allowed the time to develop, the sustenance of life being incompatible with a total, or almost total, destruction of the liver cells; death supervenes before the prolific interstitial inflammations have time to be produced; neither is this a mere hypothesis, as we shall have soon an opportunity to prove that, in various poisonings, according to the dose of poison absorbed, we have acute yellow atrophy without interstitial hepatitis at times, at other times interstitial hepatitis together with atrophy, and finally we may sometimes have a chronic cirrhosis.

Winiwarter has found in a very acute case a considerable augmentation of the interstitial cellular tissue. The lymph corpuscles were exuded in large number into the acini and in their vicinity in the interlobular spaces were found fibrillæ and fusiform bodies. The liver cells were small, atrophied and cylindrical. Fick met a similar case. Lewitski and Brodowski have met with an infiltration of the cellular tissue of the liver with rounded cellular elements.

Finally, in some cases, there may be a proliferation of the smallest elements of the liver and of the intralobular capillaries. The biliary canaliculi are increased in size chiefly in the points of real atrophy. (Thierfelder.)

The inflammation of biliary ducts has been observed by a number of conscientious observers. Some have noticed an inflammation of the mucous membrane lining the ductus choledochus (Paulicki, Reiss), others found in the interior of the canal real plugs of mucus (Bamberger, Mann, Rosenstein, Davidson, etc.). But the biliary ducts sometimes contain no bile and are often filled with mucus, and a deeper cause remained to be found, to explain why the bile does not circulate. Buhl accepts the obliteration of the canaliculi as the cause of the jaundice. Bollinger and Perls agree with him. This obliteration might be

owing to the compression due to the interstitial exudation when it exists (Frerichs), or to the accumulation of embryonal elements taking place at times in the spaces between the different structures. There is obliteration of the canaliculi from the cellular detritus furnished by the swollen walls, according to Bamberger. Thierfelder thinks that all these causes may act together.

The received notions regarding the etiology of common jaundice lead us to think that it is in the same manner a true resorption which may take place, very deep, as we can see in hypertrophic cirrhosis; the inflammation and the obstacle to excretion being seated near the lobules and the cells. This is important in another consideration still; it is sure that the degeneration of the liver cells, whence malignant jaundice results, has a certain activity which differentiates it from simple fatty infiltration, and this activity of the morbid process agrees well with the inflammation of the canaliculi.

Dr. Lancereaux lately published through his pupil, G. Dupont, an important thesis on acute diffuse interstitial hepatitis. Right or wrong, he attributes a great deal of importance in his work to the action of alcohol. However it may be, the observations recorded are most curious. In a clinical aspect, they recall all the features of malignant jaundice. Anatomically, a marked atrophy of the liver, which preserves its sharp edges, its yellow ochre hue, its elasticity, and a surface almost always glossy. "The microscope reveals in the whole extent of the viscera a diffuse infiltration of the parenchyma, beginning wherever the connective tissue exists in the liver, passing into the interior of the lobules between the liver cells, compressing and destroying the latter." These lesions recall very well those of syphilitic interstitial hepatitis, and have been carefully described by Dr. Rémy, who made an histological examination of them. Let us also remember that diffuse syphilitic interstitial hepatitis with an acute course is recognized as a cause of malignant jaundice.

In what does common cirrhosis, Laennec's cirrhosis, differ from hypertrophic cirrhosis? and why does it determine the appearance of the phenomena of malignant jaundice only in an advanced period, acting mechanically, as it were, after it has destroyed the liver cells already atrophied? This is because the

feeble irritation long renewed has been acting at times on the capillaries of the vena portæ, at other times on the mucous lining of the biliary canaliculi. The liver cells were not affected at first because the irritation was too little, the blood holding the toxic matter in too small a quantity, or the poison being too feeble, could be noxious through repetition only. If on the contrary the dose of poison had been very large, or its irritating properties very active, the liver cells, attacked in all the extent of the liver, and more or less quickly destroyed, would cease their function and the symptoms of acute yellow atrophy would be manifested. This hypothesis can be directly demonstrated.

It is more and more generally admitted that phosphorus poisoning gives rise to malignant icterus. Considering the symptoms, the similarity is absolute, so also their pathological anatomy. Considered clinically, there is nothing in phosphorus poisoning which can distinguish it from malignant jaundice, the yellow tint of the integuments and of the urine, the emeses, often the hæmatemeses, diffuse haemorrhages, nervous phenomena, are all present. Microscopical examination has not generally revealed atrophy of the liver; but this is not a characteristic, for, on the one hand acute hepatic atrophy is sometimes present in phosphorus poisoning, on the other, Liebermeister and Frerichs have found the liver normal in size in some well marked cases of malignant jaundice.

Those authors who do not admit the identity of malignant jaundice and phosphorus poisoning, rely chiefly on the fact that in malignant jaundice, there is a fatty granular degeneration of the cells, and in phosphorus poisoning a mere infiltration with fat. It seems to us that the existence, duly established, of irritative lesions, such as proliferative interstitial hepatitis, suffices to show in phosphorus poisoning something beside a simple infiltration, a passive deposit of fatty globules. It is very likely also that the jaundice of phosphorus poisoning can be referred to an inflammation of the canaliculi, as hinted by Ebstein and O. Wyss, though this remains yet to be demonstrated.

Some have looked for a chemical difference between fatty infiltration and degeneration. Perls pretends that whenever there is in a tissue a diminution of water with a corresponding increase of non volatile elements loaded with fat, there is infiltration.

There is degeneration on the other hand when, the quantity of water remaining normal, the fat replaces some other non-volatile elements. According to that, there would be degeneration instead of infiltration in phosphorus poisoning. Bauer and Voit tried to prove in another way that the presence of fat in the liver cells results from a destructive process in these. In order to prove that, they poisoned fasting dogs with phosphorus. The fat found in the liver cells must have proceeded from their own substance.

We acknowledge a preference for clinical demonstration, and we refer to the observation of Fraenkel for a proof that the lesions are a process of degeneration.

The macroscopical atrophy of the liver which evidently pertains to degeneration is clearly met in phosphorus poisoning (Thierfelder), and Fraenkel published in 1878 a case of acute poisoning observed at the clinique in Leyden. There was in the case a remarkable diminution in the size of the liver which had been observed before the occurrence of death.

In this manner by modifying the dose of phosphorus, acute atrophy of the liver, and acute diffuse interstitial hepatitis can be produced at will, and if the doses are small and repeated, common cirrhosis will occur. Weil, giving heavy doses of phosphorus to dogs in order to kill them in twenty-four hours, found no lesions of the liver. With smaller doses he obtained a fatty infiltration at the anastomoses of the capillaries; by a slower poisoning a very clear proliferation of the interstitial connective tissue with degeneration of the liver cells.

Finally Wagner, who experimented with very small doses to act on the nutrition of the bones, met with common cirrhosis and even proved the secondary effect produced on the spleen and the blood vessels of the intestine, by the obstruction of the portal circulation in cirrhosis.

What results from the absorption of phosphorus through the digestive canal may be produced by a spontaneous poisoning of the blood from various causes.

Says Dr. Vulpian, the changes in the blood are the clearest and most constant signs of malignant jaundice. They consist in a disintegration. This carries us back to the hypothesis formerly



sustained by Buhl and Troussseau, and we must admit that in the haemorrhagic icterus of Monneret, and the malignant icterus of Ozanain, there is at first a general poisoning of the organism by an infectious principle of an unknown nature, and later a destruction of the liver with suspension of its activity. The liver cells, and more rarely the parenchyma, are affected by the zymotic poison carried in the blood, malignant jaundice soon develops, more or less rapidly, and more or less intense in its evolution according to the conditions of infection and resistance.

The true nature of that poison is unknown, resembling in this particular the contagium of typhoid fever. Klebs and Eppinger, who met with bacteria in the blood, charge them with causing the disease. This conclusion is premature since the presence of bacteria is not peculiar to malignant jaundice. It is remarkable that acute yellow atrophy and the phenomena of malignant jaundice may be produced in the course of typhus fever, of typhoid fever, and other acute affections. In all febrile diseases, the liver may undergo a true, acute fatty degeneration. Between this degeneration, more or less marked, and acute yellow atrophy there is no well-defined line of demarcation. Indeed, we find some cases recorded in which liver lesion, following a pyrexia foreign to essential haemorrhagic jaundice, did not differ from the lesion of acute yellow atrophy. This hepatic degeneration has chiefly been met with in typhoid fever. (Frerichs, Oppolzer, Hoffmann, Eppinger.) Diett, Chedevergue, Griessinger and Murchison have recorded cases in which the jaundice supervened in the course of typhoid fever or during a grave relapse.

Dr. Mossé quotes an observation of Dr. Sabourin : a typhoid patient dying with a true acute yellow atrophy. In reality we must admit that, despite the exception, acute yellow atrophy may arise in the course of typhoid fever, and according to Dr. Mossé, during pneumonia. This is not to be wondered at if we consider that malignant jaundice is simply the result of a destruction going on in the liver, whatever the original cause may be.

The existence of a poison whose mode of action is reproduced by phosphorus, cannot be denied since malignant jaundice may occur in epidemics.

Such epidemics have occurred in a sufficient number. They

seem to rage in two circumstances chiefly. Sometimes there is an epidemic of mild jaundice occurring as a mild disease, taking with a few a malignant character. The danger seems to result from a want of resistance in the individuals attacked, rather than from a peculiarly malignant character of the infection.

The epidemic lately recorded by Frohlich seems to belong to that order. At other times, on the other hand, it is malignant in itself. All the individuals attacked are profoundly affected from the start; a cure becomes the exception. In this class belongs the epidemic of Lille, narrated by Coyne and Arnould. Two patients only escaped. All the rest died with the symptoms of malignant jaundice.

The want of resistance is particularly marked in pregnant women. During epidemics, even relatively mild, pregnant women and those lately confined, almost always furnished the disease with an important material, and deaths were common. It has even at times attacked pregnant women exclusively. Should we look to the fatty infiltration of the liver, normal under those circumstances, as a predisposing cause to the development of the lesions of malignant icterus? That is possible, and there is probably no line of demarcation between this physiological fatty infiltration and a morbid atrophy.

Then it is evident that essential malignant jaundice is owing to a general poisoning of the organism. The blood in this affection is in a disintegrated state as in all infectious diseases. It is black, fluid, dissolved, in a word, and presents very little propensity to coagulate. This peculiar fluid state doubtless facilitates its exudation through the vessels. "The red corpuscles are diminished in the number; part of them have been dissolved, and many of those that remain have lost their shape and become spheroidal; the serum is reddish, and the blood resembles wine dregs in color." Vulpian, Riess, Frerichs, Quinquand, have either found leucine and tyrosine, or extractive matter nearly allied, in the blood. If we remember that leucine and tyrosine have often been found in the liver, or in other organs, the brain for instance, and that they have been found in the urine about as often as they were looked after, we must give them some signifi-

cance. But it is more probable that they are the result rather than the cause of the disintegration of the liver.

The appearance of malignant icterus as an epidemic in temperate regions, leads us to consider a question long debated, and very differently solved by authors. Are icterus and yellow fever identical? Is malignant jaundice, as Monneret said, nothing but the yellow fever of our climates? We dare not discuss the question for want of facts to solve it. Let us remember, however, that Griesinger, after long argument to prove that a wide difference exists in the two diseases, concludes by admitting that malignant icterus occurring in intertropical countries could hardly be differentiated from yellow fever. An important communication was made in 1877 by Dr. Lebredo, of Cuba, to the *Société de Biologie*. This writer having made an histological examination of the liver in two cases of yellow fever, found cirrhosis disseminated in spots, like common cirrhosis of a bilious origin; round particles analogous to yellow embryonal cells in the spaces of Kiernan, and, lastly, a marked atrophy of the liver cells with an extensive fatty degeneration. According to this view, there would be no difference between the lesions in the black vomit and in malignant jaundice.

Should an identity of yellow fever and malignant jaundice be ever demonstrated, it would be satisfactory to see how, by an ascending and continuous progression, the signification of the complex malignant jaundice, in a continuous and progressive ascension, becomes more and more prominent, how it tends to take the first rank from the symptomatic malignant icterus of a chronic and morbid process in the liver to yellow fever; how the same complexus of manifestations, with a variable intensity, is produced now after a poisoning slowly and indirectly destructive, alcoholism for instance, at other times during a rapid poisoning capable of generating epidemics and of transmission by contagion.

However attractive this view may appear, it is not yet demonstrated, at least in what relates to yellow fever.

It remains, before closing this review, to bring forward an interesting point in the history of malignant jaundice, the possibility of its resulting in a cure. Until later times, death was considered a necessary termination, and, some years ago, Grellety-Bos-

well, who saw many cases terminating in a cure, durst not, for that very reason, admit the existence of malignant jaundice in these cases. He proposed to call it pseudo-malignant icterus.

The case of Dr. Bouchard, above quoted, is one of the clearest that could be met with. Nothing was wanting to the description of malignant jaundice in that case, though the patient recovered. The quantity of urine had been regularly measured, the urea carefully weighed. In a first period there was an augmentation in the quantity of both. In a second period, a marked diminution; and lastly, as a crisis, the flow of urine became profuse. Similar facts were recorded by Mossé, Arnould, and Coyne, and the rise in the quantity of urine and urea has always been the first step to convalescence. This indication, we see, is a precious one to remember.

If, before closing, a definition of malignant jaundice has to be formulated, a short description stating its nature and its character, we may say : Malignant jaundice is a complexus of symptoms consisting essentially of cerebral phenomena, coma, stupor, delirium, convulsions, various haemorrhages, and generally, though not necessarily, of jaundice. This complexus has its cause in the irritative destruction of the cells of the liver, whatever the origin or the rapidity of that destruction may be, provided it involves the liver to a certain extent. Finally, the presence of malignant jaundice does not necessarily indicate a fatal prognosis.

INHALATION OF OXYGEN IN VOMITING OF PREGNANCY.—M. Pinard publishes in the *Ann. de Gynécologie* an interesting case of obstinate vomiting cured by inhalations of oxygen. It was the case of a young woman who had reached the fourth month of pregnancy and vomited constantly. She had suffered considerable emaciation without having reached the febrile period. Treatment had consisted especially in opium internally, subcutaneous injections of morphia and the ether spray. For three days in succession she was made to inhale oxygen, ten liters the first day, twelve liters the second day, and fifteen liters the third. From this day the vomiting ceased and pregnancy went on to term.—*Journal de Médecine*, p. 372, Aug., 1880.

Selections.

CREMATION. By DR. WM. PORTER, of St. Louis.

There are few questions, so generally misunderstood, so remunerative to the careful investigator, as is cremation. No custom or rite has a deeper hold upon our civilization than that of burial. The grave has become sacred through the sorrow of millions; religion has hallowed it; sentimental imagination has pictured "its quiet rest," "nor couldst thou wish couch more magnificent" than we are taught that is, around which our poets have twined the ivy and myrtle. Well might we hesitate to strip the "silent hall" of its drapery and reveal the sepulcher "full of dead men's bones." There is a duty, however, beyond the call of custom, sentiment or our preconceived ideas of tender regard for the dead.

The welfare of the living should guide us in disposing of the dead. This thought naturally leads us to contrast the practice of burial with the proposed one of cremation. The struggle between the two methods is mainly from a sanitary standpoint—other considerations are of minor importance.

A body is to be resolved into its original constituents. The water, carbonic acid gas and ammonia are to be separated from the more solid factors. This is the end to which all methods tend, whether the body be buried, burned, or left untouched upon the earth's surface. How can this be done safely, economically, and without violence to our feelings? We can not well be careless about the solution of this problem, for we have to deal not with one body alone, but with many thousands, and they are at our very door.

Take a single instance. The form of a dear one is placed in a

coffin and buried from sight. From time to time the grave is visited, flowers are planted upon it, and deeply graven upon the marble is the sad story. We think of the silent sleeper, and in fancy gaze upon his upturned features. What is the reality? Down deep in the closely packed earth, so deep that nature's scavenger, the worm, refuses to prey—for worms do not "devour this mortal body" in our modern graves—shut off from the chemical effects of light and heat, a fearful process progresses. It is not enough to say we do not realize this, and think of the dead one as we last saw him. The change goes on whether we are sensible of it or not. The rain slowly percolates through the soil and accumulates, for most graves contain water. The festering ruin is macerated and the horrid infusion of death passes on into a water supply. The cemetery is beautifully situated upon a hillside, perhaps. Many cases of fever, "cause unknown," occur in the village below. The burying goes on, and we are soothed by the confident assertion that the earth is a deodorizer and disinfectant, no proof of harm has ever been given, there is no danger. Yes, but the proof has been given and there is danger.

Earth is a disinfectant only when thoroughly mixed with the decomposing substance. Even then it does not act freely unless the air has ready access to it. These conditions are wanting in our modern graves, and so long as that putrid mass is there, there is danger; do but touch it with your finger and if there be an abrasion you will probably die.

It is from ten to fifteen years ere complete disintegration of a human body, as ordinarily interred, is accomplished. A moderate estimate of the dead of St. Louis is 5,000 each year—50,000 in ten years. Think of 50,000 festering corpses within our city limits! No danger there? You can not trace disease to this source, say you? You can not always directly prove that defective sewage produces disease in a given case, but if common sense doesn't teach it, a sad experience may.

The Paris cemeteries are held responsible, by high scientific authority, for repeated epidemics of malignant sore throat and diarrhoea, if nothing worse, and yet sanitary science is in its infancy.

The strong arm of law in many of the older countries of Europe forbids human interment within a certain distance of dwellings, and cemeteries are removed by edict as a city grows. Strange is it that a government protects the health of its citizens, while physicians, whose province it is to investigate and guard against sources of disease, ignore the subject.

Happily this apathy is passing away. The merest tyro is not now ignorant of possible danger from inhumation, and as the sanitary physician brings new facts to light, increased opposition to burial as now practiced is developed.

What are some of these facts? Twenty years ago an epidemic of typhoid fever in Washington was traced to decomposing animal matter commingling with the water supply. Physicians began to think and to act. In 1875 the Massachusetts State Board of Health—one of the most reliable in the world—showed that typhoid fever is largely originated and diffused by emanation from bodies dead of that disease. Two years later the same high authority reached similar conclusions regarding diphtheria. Commenting upon this, the late Dr. LeMoyne says: "The inhumation of human bodies, dead from these infectious diseases, results in constantly loading the atmosphere and polluting the waters with not only the germs that arise from simple putrefaction, but also with the specific germs of the disease from which death originated."

Within my own knowledge is a case in point. A young man died suddenly from diphtheria and was buried in the village church-yard. At some little distance was a well from which the good church-goers drank freely each Sunday. Finally the water of the well became fetid, for the supply was infiltrated by the horrible decomposition from this, the nearest grave. Was it not suggestive that twenty from that little congregation died from diphtheria while this impure well was in use? These people lived in mountain homes, in a pure atmosphere, and though many of these cases were isolated—far removed from others—yet in all the disease was alike virulent and deadly.

Those opposed to cremation tell us that if the laws of hygiene are properly understood and obeyed a graveyard may be so guarded as to be harmless. Possibly, but these laws are not un-

derstood and will never be fully obeyed ; but even were it so what right have we to place a hidden quicksand in our neighbor's path and then wash our hands, because the danger has been fenced in by what we believe to be hygienic conditions ? How difficult it is to impose such conditions even were they sufficient, or to legislate in the matter, is shown in Baker's laws relating to burial.

The growth of cities is constantly changing the site of our cemeteries. "Rest in the grave" and "undisturbed sleep" is an hypothesis, not a fact. You have seen it in our own city, the sacred inclosure is needed for city lots, a fashionable street is made to traverse "God's acre." Old coffins are thrust out to make room for a water main and the grave is replaced by a cellar, where the good wife stores her milk and potatoes. Now and then a bone may come to light but it is soon carted off after its fellows. The dead have not become unworthy in the lapse of years that they are thus disturbed ; it is but a practical illustration of the principle already noted, that the depositing of the dead should be in the best interest of the living. This principle should apply as readily to the dead of yesterday as to the dead of years ago.

If we admit that inhumation is in any sense dangerous shall we avoid such danger by cremation ? In this process the body is placed in a retort, not among the coals and ashes of the furnace as many suppose. In the Siemens' furnace, probably with some modification the best, super-heated air and hydro-carbon from an ordinary gas-retort are used. "The main retort is raised to a strong heat before the body is introduced, and after it is in place and the door closed, the amount of gas used for combustion is gradually diminished, as that coming from the body is sufficient." There is no foul vapor, and any germs of disease are destroyed, for it is a scientific fact that these germs cannot live beyond a certain temperature. During the process the body may be covered with asbestos, or cloth steeped in alum, which preserves the form till the cremation is complete. Think for a moment what a blessing such a practice would be in the plague-stricken cities of the South, or in the over-crowded ones of the old world.

Here, in place of the slow, and, as we believe, dangerous reduction of "earth to earth," we have the shorter and safer one of "ashes to ashes." You accomplish in an hour that which by

burial requires a score of years. You have solved the problem, driven off the water, ammonia and carbonic-acid gas, destroyed the germs of disease, and have a more definite preservation of the solids of the body than is possible in any grave.

Probably the strongest opposition to cremation results from the horror of "being burned up," and a tender sentimentalism associated with our buried dead. This demands respect. Were the grave what it seems to be, were it within what it is upon the surface, this opposing ground would be well chosen. Remove a few feet of soil from the surface of our Bellefontaine, and note that change in the coffin since you last saw it. I well remember, when a boy, seeing our old sexton exhume a body burried for several years, that of a strong man, called away in the prime of life. The rotting coffin was slowly lifted from its damp bed, and the lid being broken we saw within a horrible mass of putrefaction. Matted hair and decomposing grave clothes but poorly covered the blackened skeleton as it lay in the once handsome casket, now reeking with the emanation of its loathsome contents. Yet this had been a beautiful grave; roses had bloomed upon it and the arbor-vitae had whispered to it. There would be but little plea for the grave on the ground of sentiment could we see the changes there taking place; there would be few, if any, who would not choose that the body, after faithful service, should be purified by fire, rather than left to rot in such a grave.

Cremation has been advocated upon the score of economy. Our funerals entail great expense, and tombs are costly. I have seen the living pinched for their daily bread to pay the funeral expenses of the dead. In the crowded cities of Europe, where the cemeteries are necessarily at a distance, it is by a great sacrifice that the poor and sometimes the middle classes can provide for even the most unpretentious burial. The body of a London cockney is carried, at comparatively great expense, by his family out of the city which in his lifetime he was too poor to leave for a single day.

Granting, however, the objection, which is not by any means proven, that an equal amount of useless expenditure would be indulged in if cremation were adopted, as attaches to the present method, yet this remains: The vast acreage devoted to ceme-

teries and grave-yards represent sufficient value to provide crematories in every city and village in the land, and the proceeds of this land would be amply sufficient for the work of cremation wherever adopted. Further than this, the land would be productive—a matter of no little moment in some countries.

An objection to cremation has been raised on the ground that it is a heathen custom, opposed to the practice of the early Christian church. Will not our conscience be void of offense (in this respect, at least) toward the God who is the God of the living and not of the dead, if we dispose of the dead in the interest of the living? The great Founder of the church was not buried as we bury men, but was embalmed as, possibly, his ancestors had learned centuries before in Egypt. Many Christian martyrs have been cremated—not by their friends, it is true, but the process was none the less complete—and their ashes are held sacred. I know not if, in the Bible or among the teachings of holy men, there is one word to indicate one method of disposing of human remains as preferable to another.

It is true that a recent English writer says that the argument from religion is “dead against cremation, the few hints of the inspired writers all pointing to the earth as the final resting-place of the dead.” We answer, inspired writers used similes in keeping with the customs of the age in which they lived. As well might we say that certain portions of the Bible taught that we should live in tents or tread out corn with oxen.

A further objection to cremation is that it would destroy all traces of criminal poisoning. True, but if cremation were instituted, there would be more careful scrutiny of dead bodies, and more official examinations. The detection of crime would be rather aided than hindered. Besides, we have no right to advocate a more or less general system of poisoning by inhumation that we may in rare cases discover one who has been the victim of poison. As recently shown by an honored member of this Society, such discoveries do not amount to much at best.

Public sentiment is practically opposed to cremation, and yet among our more thoughtful citizens there is a strong current in its favor. I have been surprised at the expression of this feeling—not alone as evidenced by your Society, gentlemen, but from

many who are ready with you to practically indorse your action. This much in our own city. Abroad, in London, Vienna, Berlin, Padua, Paris, Leipsic and elsewhere, societies are now well established. The subject is receiving more thought and more favor than at any previous time. We are told that cremation can never be adopted. The London *Spectator*, of recent date, asserts that it has lost its force, never having made much progress. This is at variance with fact. Cremation is now being advocated principally upon sanitary grounds, and sanitary laws are only beginning to be understood. Much is yet to learn, but the little already known favors cremation. However, the *Spectator* sees enough of life in the cremation movement to desire a compromise between it and the usual method of burial. Wisely thought of. The charge of enthusiasm and fanaticism is now being cast upon the advocates of cremation from some who would be content that science should "stand like Joshua's moon at Ajalon." Most of the advance in every department of knowledge has been made by enthusiasts, and the charge of fanaticism is generally the strongest argument of him who brings it, worthy of its source, and worthless in this age. The position assumed by this Society is strong and right. You have placed the living before the dead, and though you may have to deal with many a dead man, so far as reason is concerned, yet the principles involved will live. It is not founded upon fanaticism, but deep-rooted in a strong sense of right and justice.

THE THERMOMETRIC BUREAU.

[We copy the following from the circular of the Horological and Thermometric Bureaus of Yale College, which may interest some of our readers.—ED.]

Statistics show that several thousand thermometers of refined construction, and graduated on the stem to $0^{\circ}.2$ F. or thereabouts, are annually procured by the medical practitioners of our country alone for physiological researches and daily practice. The majority of these thermometers are newly made (within six months), and their verification depends on inferior (from the scientific standpoint) thermometers in the hands of individual

makers. It is needless to say that the readings of such thermometers have little value in indicating the true temperature of a patient, or affording data in cases which the physician wishes to describe in print.

The makers of thermometers in our country have been, in general, content to use for their standards thermometers which have been compared at some foreign observatory, or with some more easily accessible instrument in which they place confidence, in the hands of a friendly neighbor. Thus it happens that many thousand American clinical thermometers have been sold, which do not depend upon a comparison with a recognized standard for their scale readings. The result has been that the American instruments have suffered in the estimation of scientific practitioners. This is not so much the fault of the American makers as their misfortune in not having the same facilities offered them by the properly equipped observatories this side of the water, which their favored competitors enjoy abroad.

The meteorological observers in this country have now no common standard of easy access; and it seems eminently proper that the observatory should undertake to be useful to the medical profession and the meteorologists in this country, and afford the means of comparison desired. With this end in view, the observatory has accepted the aid of the Board of Directors of the Bache Fund of the National Academy in obtaining the standards of the foreign observatories, and has made provision for the constant determination of the errors of the standards themselves. The following is the official circular of the Thermometric Bureau:

CIRCULAR CONCERNING THE VERIFICATION OF THERMOMETERS.

This Bureau has been established by the Corporation of Yale College, at the recommendation of the Board of Managers of the Winchester Observatory, in order to afford desired facilities for the adequate verification of thermometers.

Thermometers will be received by the observatory for the purpose of comparison with the observatory standards, and certificates of comparison signed by the astronomer in charge will be issued with thermometers so compared. These certificates will

contain a statement of the corrections to be applied at intervals of five or ten degrees of the thermometer scale to cause it to have the same reading as the observatory standards. In general these corrections will be expressed in tenths of a degree Fahrenheit, or in twentieths of a degree Centigrade.

Thermometers sent for verification must have a name and number engraved upon them; and thermometers which are not graduated on the glass stem must be of sufficiently good workmanship to satisfy the observer in charge that the scale will not suddenly change with reference to the glass stem of the thermometer tube, with ordinarily careful usage.

The Board of Managers have established the following scale of charges for this service, which includes the hall mark and the certificate :

Standard Meteorological Thermometers.....	\$1.00
Ordinary Meteorological Thermometers.....	.50
Ordinary Maximum Thermometers.....	.75
Ordinary Minimum Thermometers.....	.75
Clinical Thermometers.....	.50

There will be a deduction of one-fifth of the above charges where more than eight thermometers of one kind are received at the same time. In the case of clinical thermometers the charge will be four dollars per dozen when not less than two dozen are sent at the same time.

For other thermometers than the above, the charges for verification will be furnished on application.

The letter of advice accompanying thermometers sent for verification should contain the maker's name, the number of each thermometer, and full directions for reshipment.

All proper precautions are taken by the Board of Managers to guard against loss or injury; but as it is manifestly inexpedient that a University corporation should be responsible for property in its care for such a purpose, it is to be understood that all risks are assumed by the person sending the thermometers.

LEONARD WALDO, *Astronomer in Charge.*

Approved and ordered to be published by the Board of Managers of the Winchester Observatory.

C. S. LYMAN, *President.* H. A. NEWTON, *Secretary.*
NEW HAVEN, CONN., June 1, 1880.

The observatory desires to encourage the general verification of thermometers on the part of the members of the medical profession, meteorological observers, and all those persons who have occasion to note temperatures to less than one degree Fahrenheit. The inaccuracies of the thermometers in use by the majority of such persons are considerably greater than is commonly supposed.

It will be seen that the observatory places every facility at the disposition of observers and thermometer makers for the ready verification of thermometers; and there is no good reason why a purchaser should not have an accurate knowledge of the errors of his instrument should he so desire.

The observatory will make arrangements with hospitals and other institutions using a number of thermometers, for the systematic examination at stated intervals of all thermometers in their use. Such an arrangement precludes errors arising from the use of newly made instruments which have been verified, but whose scales have not yet attained an approximately permanent position.

For the present the comparisons of clinical and meteorological thermometers will be made with a water bath in which the water is brought to a given temperature and mechanically agitated before the comparison is made. The standard to which the primary and secondary mercurial standards will be referred is the air thermometer.

Ordinary thermometers are returned within three days from the time of their reception, if the observatory charges for verification are remitted with the thermometers.

In case they are not so remitted, they are payable upon notification by the observatory that the thermometers are ready to be returned.

Dealers and manufacturers furnishing satisfactory references to the observatory may open an account, to be settled quarterly, beginning with January 1 of each year.

OPERATION FOR UNITED FRACTURE OF THE OLECRANON BY
OPENING THE JOINT, AND WIRING THE FRAGMENTS TO THE
ULNA; BONY UNION. (Under the care of Mr. WILLIAM
ROSE.)

For the following notes we are indebted to Mr. John Phillips,
house-surgeon :

W. M., aged twenty, was admitted into Fisk ward on March 31. Early in January he fell down on his left elbow. Great swelling followed, and he was treated by his medical attendant for a simple sprain. He noticed, however, that as the pain and swelling subsided he could not extend the forearm. In the beginning of March he attended King's College Hospital as an out-patient under Mr. Rose. A fracture of the left olecranon was detected with about half an inch separation between the broken surfaces. The forearm was extended and bandaged upon a splint in order to relax the triceps, so as to bring the olecranon down to position. As this was followed by no marked improvement, Mr. Rose operated on April 1.

A longitudinal incision three inches in length was made over the seat of fracture, and the joint opened. The olecranon was freed with a few touches of the knife from its lateral attachments, and drawn down to the ulna without difficulty. The fibrous tissue which had formed between the broken surfaces was carefully dissected away, and the opposing surfaces of bone were scraped with a chisel until they were quite bare. A hole was then drilled obliquely in the ulna, and another exactly corresponding to it was made in the olecranon, care being taken to bring out the point of the awl, on the rough surfaces just outside of the articular cartilage. A strong silver wire loop was then passed through the holes thus made, and drawn tight. The broken fragments were thereby brought closely and firmly together and the wire was entirely outside the joint. Horsehair drainage was used, and the wound was closed with carbolized silk sutures. Gauze dressings were applied, and the limb was put on

a splint with the forearm extended. Strict antiseptic precautions were observed throughout.

The after-progress of the case was highly satisfactory. The joint remained perfectly quiet, the patient complained of no pain, and the temperature never rose above 99.4°, nor his pulse above 84.

The antiseptic dressings were changed only seven times in the five weeks which elapsed before the silver wire was removed. The joint was moved the tenth day, and on the seventeenth day from the operation the patient was able to extend the forearm. After this the action of the triceps steadily improved, and the patient left the hospital on May 13 with evidently firm bony union.

Mr. Rose remarked that he was led to undertake this operation of opening the joint and wiring the fragment, not because the fracture was ununited, but because the arm had lost all power of extension in consequence of the complete laceration and displacements of the lower attachments of the triceps muscle. He would not recommend the operation in every case of fracture of the olecranon. It was not an uncommon occurrence to find a considerable amount of extension in such cases. This was to be explained by assuming that, though the olecranon had been detached, the fibrous insertion of the triceps had not been entirely severed.

LITERATURE AND MEDICINE is the title of an article in the July *Eclectic*. It treats of the various points at which the two professions touch. Among others is the kind tendance given to men of genius by those whose care and duty it is "to stand between man and his doom. " Who can forget Dryden's grateful acknowledgement of the services of Hobbes and Guibbons? or Cheselden's goodness to Pope? or Meade's to Gay? or Arbuthnot's to every literary man with whom he came in contact? "There is no end of my kind treatment from the faculty," writes Pope, a few weeks before he died; "they are in general the most amiable companions and the best friends, as well as the most learned men I know."

Summary.

PERISCOPE OF RENAL AND URINARY PATHOLOGY.

1. The *Cincinnati Lancet and Clinic* (Aug 7, 1880) reports a case from *Le Praticien* in the practice of M. Hardy, in which the presence of indican in the urine was regarded as important in establishing the diagnosis in a doubtful case of typhoid fever. Exactly what relation indican bears to typhoid, more than to any other continued fever, is not stated.

2. "Extirpation of the Kidney. Death on the fourth day after operation." By Fred. Lange, M.D. New York: *Med. Record*, Aug. 7, 1880.

Dr. Lange's case is one of great pathological and surgical interest. He extirpated the right kidney, after careful and repeated examinations, assisted by other medical gentlemen. A diagnosis of pyonephrosis, involving the right kidney was made. The left kidney was supposed to be in a healthy condition, mainly because, when the symptoms pointed to the conclusion that the right ureter was closed temporarily by pus and products of degeneration from the tumefied, tender and painful right kidney, the discharge of urine became suddenly normal (or very nearly so) as to quality and did not lessen in quantity. As Dr. Lange says: "nothing was more probable than to assume that the (right) ureter was now completely or almost completely obstructed, and that the urine was discharged from the other (left) side." The patient demanded that something "decisive" be done. Accordingly Dr. Lange "proposed an exploratory incision" with the intention of removing the diseased organ or incising it, as should seem wisest. It was thought best, upon reaching the diseased organ, to extirpate it, as it seemed to be wholly devoid of functional

power, and the left kidney was still regarded as healthy. The patient rallied well from the operation, "and presented a good condition, complaining merely of pain in her back and right hip. * * * not a drop of urine was found in the bladder until her death, which occurred on the fourth day, eighty-four hours after the operation."

The post mortem readily explained the immediate cause as well as the mode of death, which was in a state of profound coma. We quote Dr. Lange's language: "The left kidney, which was removed by autopsy, consists of several cystic cavities, two of which contain a fluid-like urine; one of about the size of a hen's egg was filled with thick, cheesy matter. There is no trace of tissue of the kidney left. The pelvis of the kidney is entirely obliterated and so is the ureter. Probably for a number of years no urine has been secreted from this organ. The disease which caused this degeneration might have occurred in the patient's earliest childhood, at least she could not remember having had any trouble in this side. The organ was at its normal place, and although cystic, it was only slightly increased in size and its shape was not materially changed from the normal. * * * The other kidney, the right one, which had been removed by operation, was about double the size of a normal one. In a longitudinal section it is seen that it consists essentially of two parts; one, embracing about the upper two-thirds, is solid, presenting tissue of the kidney in a state of hypertrophy, measuring from two to three centimeters in height. The uppermost edge has a very irregular surface, and here the tissue is scattered with small knot-like infiltrations, measuring from several millimeters to one centimeter in size. * * * A part of this tissue has been removed for microscopical examination. All those spots seem to be beginning abscesses. Some of them present a yellowish purulent appearance; others a more recent infiltration. The pelvis of the kidney, so far as it belongs to these upper two-thirds, presents a normal appearance. The lower third of the kidney is composed of a number of cysts, the largest being about the size of a small hen's egg. Those cysts contained urine and pus and seemed not to have any connection with the pelvis. But a careful examination shows that there exist several narrow canals lead-

ing to the pelvis." The further description of the lower third of the right kidney shows that it was in an extreme state of cystic degeneration. The total amount of renal tissue capable of any functional duty possessed by the patient was the "upper two thirds of the right kidney, and even that was in a condition far from normal. Dr. Lange's grounds for concluding that the left kidney was healthy were certainly just and reasonable. He seems to us to have been unusually careful and painstaking in his diagnosis, and yet he was, as he says, "induced to perform an absolutely deadly operation." Dr. Lange's candor and honesty in relating this unfortunate case is worthy of all commendation.

3. "On a Filiaria reported to have come from a Man."
(*Medical News and Abstract*, Sept., 1880.)

Prof. J. Leidy describes, in the "Proceedings of Acad. of Nat. Sci. of Phila. for March, 1880," a large thread worm, which had been submitted to his examination by Dr. J. J. Woodward, U. S. A. It was recently presented to the Army Medical Museum by Dr. C. L. Garnett of Buffalo with the following explanation: "During the winter of 1876 a common laborer presented himself to me for treatment, having a gleety discharge from the urethra with a burning sensation during and after micturition. Previously he had been treated for gonorrhœa, and I prescribed accordingly. The patient not improving, applied to other practitioners. In April, 1878, he came to me with a round, vivid-red worm, twenty-six inches in length, which was alive and very active in its movements, instantly coiling up like a watch spring on being touched. The patient is an illiterate man with no motive for deception. He informed me that he discovered the worm protruding from his penis and drew it out without pain or difficulty. Prof. Leidy says "if it really is a human parasite, it appears to differ from all those heretofore described, and also seems different from other known parasites; and "for the present," he proposes to "distinguish it with the name *Filiaria Restiformis*." (But how did the worm find its way into the patient's bladder and how long did it remain there before passing away?)

4. The Sphygmograph in the early diagnosis of Bright's disease. *British Med. Jour.*, Aug. 14, 1880.

We quote from Dr. John Buckley Bradbury's "Address on

Medicine," before the British Medical Association, at its late meeting, the following very interesting observations concerning the value of the sphygmograph in the diagnosis of commencing Bright's disease :

In the field of medicine to which the sphygmograph has been used, the harvest has been more abundant than in the case of the laryngoscope, chiefly owing to the researches of Burdon Sanderson having been elaborated by Galabin, Mahomed, and others. In his thesis, read in 1873, for the degree of M.D. in this University, Dr. Galabin, formerly Fellow of Trinity College, corroborated the views of Burdon Sanderson, George Johnson and others, on the use of this instrument in estimating the amount of arterial tension, as gauged by the height of the tidal or prediastolic wave of a pulse-tracing ; and for the first time pointed out that high arterial tension exists in acute as well as chronic Bright's disease. The condition of high-blood pressure is of the greatest importance clinically, and should be watched and estimated as carefully as the body-temperature, as there is no doubt it will be when the sphygmograph has been further simplified. High blood-pressure gives the earliest indication of the grave series of degenerative changes throughout the body known as chronic Bright's disease, and may, if neglected, lead to disastrous results both in disease of the arteries and of the heart. High blood-pressure is the cause of all so-called heart-disease in old persons ; it is very amenable to treatment, and its treatment is imperatively necessary. Dr. Galabin writes : " I believe that one of its (sphygmograph's) successful applications would be to estimate the probable duration of life, by showing how far the vascular system has undergone the changes to which it is subject with advancing years, or which may be the only indication of commencing Bright's disease.

Dr. Handfield Jones has recorded a series of cases in which, without albuminuria or other symptoms of Bright's disease, the sphygmograph has sufficed to diagnose the disease, the high-pressure in the pulse being really its pathognomonic symptom. Of the value of the high tension in prognosis he thus writes : " If I were bold enough to be a prophet, I should point to the time when the elder folks, instead of waiting until they have had a

stroke of apoplexy or a touch of paralysis, or are laid up with arterio-capillary fibrosis or *morbus Brightii*, and then hurriedly summoning a physician to do impossibilities, will seek his advice betimes, asking him to supervise their vital functions, regulate their mode of life, and teach them to stay the morbid changes which they know may be silently progressing."

" In a paper published in 1874, Dr. Mahomed tried to show that a chronic condition of high blood-pressure led to arterio-capillary fibrosis. This view he has further elaborated in a paper in the last volume of the *Guy's Hospital Reports*, where he says that the hard pulse—the pulse of high tension—is the sign of Bright's disease; and that it should altogether replace albuminuria, for this is only exceptionally present."

" High blood-pressure gives rise to many functional as well as structural disorders. In the paper referred to, Dr. Mahomed described the occurrences of this condition in an acute and transient, as well as in a chronic and permanent, form, as the result of certain blood-poisons, and as an *antecedent* of kidney-disease. He has also demonstrated its existence in pregnancy, and thus indicated the connection between pregnancy and kidney-disease (so-called), and thus with puerperal eclampsia."

" This condition of high blood-pressure, appears to be recognizable early in life, before it has given rise to any structural changes or symptoms, and may be described as depending on the *diathe-sis*, or less correctly on the *temperament*, of the person. It is a condition which, when once detected, should be closely watched and treated, otherwise it will develop into chronic Bright's disease. * * * * *

" The possibility of recognizing Bright's disease in its pre-albuminuric stage by means of the sphygmograph leads me to think, with Dr. Handfield Jones, that this instrument has a great future before it. When people become wise enough to pay their doctors for keeping them in health by periodically examining them to see if there be any abnormal change taking place in their bodies, the sphygmograph must come into general use in our profession. How many valuable lives might be prolonged if this suggestion which I have thrown out were acted upon! An indigestion, with increased arterial tension, is, as Dr. Saundby and others have

shown, the forerunner of Bright's disease ; and this functional stage of the malady is probably quite amenable to treatment. This condition of high arterial tension occurs in those who eat too much nitrogenous food for the exercise they take, and thus overtax their digestive organs and load their blood with imperfectly assimilated food. * * * *

"One other point of great importance, in reference to albuminuria and arterial tension, which must not be altogether passed over, is the so-called "Albuminuria of Adolescents," which was the subject of a paper by Dr. Moxon in the *Guy's Hospital Reports* for 1878. In those cases of albuminuria which occur in young men from the age of sixteen to twenty-two, the albumen is not always present in the urine, but intermits ; it is generally, however, present in the urine at some period of the day, most frequently in that passed after breakfast. These patients are usually languid, listless, complaining of headache, are anaemic, and "generally out of condition ;" but after a variable time, under the influence of tonic treatment, the albuminuria usually entirely disappears, and the patient's health is restored. Now, in these cases of albuminuria, the arterial pressure is quite normal, or low rather than high. I have seen several cases of this description amongst the undergraduates of the University and others, and it is of the utmost importance to recognize them clinically ; for the prognosis in them is favorable, and the line of treatment to be adopted the very opposite of that which obtains in cases of albuminuria with high arterial tension. I am disposed to agree with Sir William Gull, that the albuminuria in these cases is due to atony of vessels and nerves. He says, that albuminura occurs in young and growing men and boys almost as frequently as spermatorrhœa."

In reference to this subject, Dr. George Johnson maintains, "first, that this latent albuminuria—albuminuria, that is, unassociated with any other evidence of functional disorder or structural disease—may, by a careful inquiry, be traced back, in a very large proportion of cases, to some probable exciting cause ; secondly, that the presence of even the smallest trace of albumen in the urine is always pathological, never physiological ; and that the neglect of this indication of a pathological condition and ten-

dency, especially such negligence as involves repeated exposure to the exciting cause, may convert a temporary and occasional into a persistent albuminuria, which, sooner or later, though it may be after many years, will result in a fatal disorganization of the kidney."

"The probable causes of such albuminuria are, in Dr. Johnson's opinion, either (1) imperfect recovery from an acute renal attack; or (2) exposure to cold and wet, especially after being overheated and fatigued by prolonged or violent exercise (common in boys at school); or (3) imprudently prolonged cold bathing; or (4) excessive consumption of animal food and of alcoholic stimulants, either separately or combined; or (5) inveterate dyspepsia in persons of strictly temperate habits; or (6) mental anxiety; and, in some cases, a combination of two or more of these causes."

"There can be no doubt that, at the present time, physicians do not regard simply the presence of albumen in the urine as so serious a sign as they would have done ten years ago. The late Dr. Murchison regarded some cases of albuminuria as due to hepatic derangement. In his work on *Disease of the Liver*, second edition, p. 573, he writes as follows: "There are, also, reasons for believing that albuminuria may be induced by hepatic derangement, independently of structural disease of the kidneys. It is now generally acknowledged that albuminuria, even when copious, and in the absence of any acute febrile disorder, does not necessarily indicate renal disease. Very often in these cases the albuminuria is intermittent or remittent, and the albumen has peculiar chemical characters; the previous addition, for example, of a few drops of mineral acid preventing to an unusual extent the subsequent coagulability by heat. Errors in diet are one of the most common causes. In some persons peculiarly constituted, temporary albuminuria is a constant result of certain articles of food, such as uncooked eggs. In several instances, I have known the urine passed at night to contain albumen, often associated with lithates and a high specific gravity, whereas the morning urine was clear, of low specific gravity, and contained no albumen. Again, in certain cases of exophthalmic goitre, the urine at some hours of the day, usually after food, is loaded with albumen, whereas at others it contains none; and this state of

matters may last for many months, and then completely disappear. Now it is not contended that, in all these cases, the liver is the organ primarily at fault, but certainly in some there is good reason for believing it to be so, the albuminuria being unattended by any other symptom of renal disease, being variable in quantity and sometimes absent, and the urine being of normal quantity, of high specific gravity, and habitually loaded with lithates, lithic acid, oxalates, and pigments, and there being very often cutaneous eruption, dyspepsia, and other evidence of hepatic derangement. I have met with several instances of this sort, where the patient was subject to severe attacks of what at first seemed to be hepatic colic, but where there was no jaundice, and the paroxysm was followed by a temporary, yet extraordinary, increase of lithates and albumen in the urine. Lastly, so often have I observed albuminuria associated with hepatic disorder, which has disappeared completely and permanently when this has been set to rights, that I have little doubt that we have, in the liver, a cause of albuminuria to which attention has not hitherto been sufficiently directed."

"Before leaving the subject of albuminuria, I would especially invite the general practitioner in medicine to help us to solve the meaning of this intermittent appearance of an abnormal substance in one of the secretions. They have opportunities of watching cases in private from day to day, and of knowing the habits of their patients better than a physician, who is only consulted occasionally. It is of the utmost importance that the question should be settled as to whether these forms of albuminuria are due to removable causes, such as indigestion, etc., or whether, as Dr. Dickinson would have us believe, they represent the initial stages of granular degeneration of the kidney."

5. "On Occipital Headache as a symptom of Uræmia" (Cincinnati Lancet & Clinic), Dr. E. C. Seguin says: "I have recently met with two cases in which occipital headache was so localized and persistent as to give rise to a strong suspicion of organic disease of the cerebellum, and in one of them a positive conclusion was only reached by means of a post mortem examination. These cases both now appear to have been cases of contracted kidney and uræmia."

6. "Recent Studies in Albuminuria," by H. S. Kilbourne, M.D., Asst. Surgeon, U. S. A. (Buffalo Med. and Surg. Journal, Sept. 1880.) Dr. Kilbourne's paper is mainly a *résumé* of the recently expressed views of Saundby, Duke, Johnson, Mahomed and others, but we quote the following observations of Leube, which Dr. Kilbourne thinks "seem to prove the possibility of albuminuria in the physiological state:"

Leube undertook his researches on the garrison of Erlangen and took the necessary precaution to exclude cases of blennorrhagia. Fresh urine was filtered and a certain quantity boiled; the remainder was treated with nitric acid, both being compared with the intact urine on a block tablet. To the urine which showed opacity a small quantity of acetic acid was added to precipitate the deposit. The precipitate was washed and treated with Millou's fluid and also tested with Liq. Potass. Leube examined the night urine of 119 soldiers. The number of observations was 154, which were thus divided: 90 soldiers were examined once, 23 were examined twice on two different days, and six were examined three times at intervals of three days. Of 154 examples of nocturnal urine, only a small quantity was found in 5 cases and in one case in notable proportion.

Examination of the urine secreted during the day, after military exercise, and in the months of June, July and August gave different results. Of 5 soldiers who had shown albumen in the night urine, a larger quantity was found during the day, and albumen was found in 18 soldiers who had not shown any in the night urine. Stated as a percentage, the morning urine was albuminous in 5 of 119 soldiers, i. e., in 4.2 per cent. That of the middle of the day was albuminous in 19 of 119, i. e., 16 per cent. The day urine only was albuminous in 14 of 19, i. e., 11.8 per cent., and, finally, the urine was equally albuminous in 5 of 119, i. e., 4.2 per cent.

The quantity of albumen in the urine most heavily loaded was 38 milligrammes per cent.

At the International Medical Congress, held in Amsterdam, September, 1879, Prof. Seminola in a *résumé* (*British Medical Journal*, September 27, 1879) of his researches in 300 cases of Bright's disease, presented to the medical section, said: The

passage of albumen into the urine may take place through the three physiological factors that preside over the renal functions, viz.: *a*, chemical constitution of the blood; *b*, degree of pressure; *c*, condition of the histological elements of the kidney. Accordingly there are three classes of albuminuria, viz.: *a*, dyscrasie albuminuria; *b*, mechanical albuminuria; *c*, mechanical albuminuria produced by irritation, i. e., by histological changes in the kidney.

Bright's disease cannot be placed exclusively under either of these heads. It is a mixed albuminuria. Its complicated etiological mechanism contains all the three mechanisms of the other classes of albuminuria, and it forms a pathological specialty that has nothing whatever to do with the other classes of this affection. The most characteristic phenomenon of Bright's disease, he thinks, is the defective formation of urea. This would be indicated, not by specific gravity of the urine, but by the weight of urea excreted.

UNDER date of May 14th, 1880, Dr. Chas. W. Robbins, of Milwaukee, Wis., makes a brief record of an exceptional case. Mr. M., aged 38, had his left testis removed for malignant disease, in the year 1874. The right gland became similarly affected during the course of the succeeding year, and was subsequently removed by Dr. Marks, of Milwaukee. For the past few months, the cord of the left side, which had not been completely extirpated when the first operation was performed, has been excessively painful, and it was removed on the 13th of May by Dr. Marks, assisted by Dr. Robbins. The patient stated that, since the removal of the second gland, he has regularly had sexual desire, erection and coitus, not apparently differing from that in which he indulged before castration.

Items.

LIST OF BOOKS WHICH WILL BE FOUND VALUABLE TO CANDIDATES FOR EXAMINATION IN SANITARY SCIENCE BY THE MICHIGAN STATE BOARD OF HEALTH.

The books are here classified the same as the topics published in the Regulations for the Examinations. The necessity of reading all of the books is not urged.

I.—Introduction to the study of Biology. H. Alleyns Nicholson. Appleton & Co., New York, 75 cents. Article on Biology in Encyclopædia Britannica and in other Cyclopedias.

II.—(a.) Theory of Probabilities. M. A. Quetelet, translated by O. G. Downs. C. & E. Layton, London, England, \$5.50. Articles on Statistics and Vital Statistics in various cyclopedias. Essays and Papers on Some Fallacies of Statistics. H. W. Rumsby. Smith, Elder & Co., London, England, 12 shillings. Vital Statistics of Michigan, Annual Reports 1868-1874. Article—Report on Methods of Collection of Vital Statistics in Report of Michigan State Board of Health for 1876. Article on "Weekly Reports of Diseases in Michigan." Annual Reports Michigan State Board of Health, 1878-1880. (b.) Vital Statistics of Michigan for 1872 and subsequent years. Annual Reports of the Michigan State Board of Health, 1878-1880. Articles on "Weekly Reports of Diseases," and "Principal Meteorological Conditions in Michigan." (c.) Filth Diseases and their Prevention. John Sineon, M.D. James Campbell, Boston, Mass. Disposal of Slop Water in Villages. C. B. Fox J. & A. Churchill, London, England, 18d. Healthy Houses. Fleming Jenkin, F.R.S., adapted to American Conditions by George E. Waring, Jr. Harper's Half-Hour Series, 25 cents. House Drainage and

Water Service. James C. Bayles. David Williams, New York, \$3.00. Wilson's Handbook of Hygiene. Blakiston, Philadelphia, \$3.00. Hart's Manual of Public Health. Smith, Elder & Co., London, England, 12s. 6d. (d.) Anstie on Stimulants and Narcotics. Blakiston, Philadelphia, Penn., \$3.00. Tables, etc., on Mortality by Occupations, in United States Census, and in Vital Statistics of Michigan, 1868-1874. (e.) Disease Germs; Their Nature and Origin. L. S. Beale. Blakiston, Philadelphia, \$5.00. The Germ Theory of Disease. Mælagan. Macmillan & Co., London, England, \$3.00. *Lectures on the Theory and General Prevention and Control of Infectious Diseases, by Jas. B. Russell. James Maclehose, Glasgow, Scotland. Fermentation. Schützenberger. Appleton & Co., New York, \$1.50. Practical Biology. Huxley and Martin. Macmillan & Co., London, \$1.50. Air and its Relations to Life. W. N. Hartley. D. Appleton & Co., New York, \$1.50. Article on Origin and Propagation of Disease. John C. Dalton, M.D., read before the New York Academy of Medicine. Smithsonian Report, 1873. (f.) *Lectures on the Theory and General Prevention and Control of Infectious Disease. Jas. B. Russell. James Maclehose, Glasgow, Scotland. (g.) Parkes' Hygiene, edited by De Chauumont. Blakiston, Philadelphia, \$6.00. Documents on "Restriction and Prevention of Scarlet Fever;" on "Restriction and Prevention of Diphtheria;" Circulars 34 and 35; issued by the Michigan State Roard of Health, Lansing. *Lectures on the Theory and General Prevention and Control of Infectious Diseases, by Jas. B. Russell. James Maclehose, Glasgow, Scotland. Annual Reports of the Michigan State Board of Health, 1876-1880.

III.—(a.) Attfield's General Medical and Pharmaceutical Chemistry, 8th Revised ed. Henry C. Lea's Son & Co., Philadelphia, Penn., \$2.50. *Lectures on Air, Water Supply, Sewage Disposal, and Food. William Wallace. James Maclehose, Glasgow, Scotland. Letheby on Food. Wm. Wood & Co., New York, \$2.25. Hassells' Food and its Adulterations. Longmans, Green & Co., England. Parkes' Hygiene, edited by De Chauumont. Blakiston, Philadelphia, \$6.00. Wanklyn and Chapman's

*The lectures by James B. Russell, M.D., and William Wallace, are published in one volume by James Maclehose, Glasgow, Scotland; price, 1s. Adams and Co., London, England.

Water Analysis. Trübner, London, England, \$2.50. Frankland's Water Analysis for Sanitary Purposes. Blakiston, Philadelphia, \$1.00. (b.) Loomis on Meteorology. Harper, New York, \$1.75. (For reference.) Air and Rain. R. Angus Smith. Longmans, Green & Co., London, 34s. Annual Reports of Michigan State Board of Health for 1874, article on "Meteorology of Central Michigan;" 1875, directions for taking meteorological observations, also an article on Ozone; 1878-1880, articles on "Principal Meteorological Conditions in Michigan." Air and its Relations to Life. W. N. Hartley. D. Appleton & Co., New York, \$1.50.

IV.—Sanitary Engineering. Baldwin Latham. E. and F. Spon, London, England. Sanitary Engineering. J. Bailey Denton. E. & F. Spon, London, England. Parkes' Practical Hygiene, edited by De Chaumont. Blakiston, Philadelphia, \$6.00. House Drainage and Water Service. James C. Bayles. David Williams, New York, \$3.00. The House and its Surroundings. D. Appleton & Co., New York, 40 cents. Sanitary Houses. Two Lectures, by James A. Russell, A.M., M.B., etc. Maclachlan and Stewart, Edinburgh. Simpkin, Marshall and Co., London, England. Sanitary Work in Towns and Villages. Charles Slagg-Crosby, Lockwood & Co., London, England. Sanitary Work in Villages and Country Districts. George Wilson. J. & F. Churchill, London, England, 18d. *Lectures on Air, Water Supply, Sewage Disposal, and Food. William Wallace. James Maclehouse, Glasgow, Scotland. Healthy Houses. Wm. Eassie. D. Appleton & Co., New York, \$1.00.

V.—House Drainage and Water Service. James C. Bayles. David Williams, New York, \$3.00. Handbook for Inspectors of Nuisances. Edward Smith, M.D. Knight & Co., London, England, 5s. *Lectures on the Theory and General Prevention and Control of Infectious Diseases. James B. Russell. James Maclehouse, Glasgow, Scotland. The Sewage Question—with special reference to Traps and Pipes. H. Fergus, M.D., M.R.C.S. Porteus Brothers, Glasgow, Scotland, 18d. Annual Reports of the Michigan State Board of Health, 1873-1880. Schedule for Sanitary Survey of a City. Am. Public Health Association

* The lectures by James B. Russell, M.D., and William Wallace, are published in one volume by James Maclehouse, Glasgow, Scotland; price, 1s. Adams and Co., London, England.

Published by U. S. National Board of Health, Washington, D.C. Sanitary Inspection of Memphis, Tennessee, Schedules and Report. National Board of Health, Washington, D. C.

VI.—Compiled Laws of Michigan, 1871. Public Health Enactments in Session Laws of Michigan since 1871, particularly late ones, 1877, 1879 and 1881 (?), with index of laws amended, etc. Public Health Laws of Michigan. Pamphlet, 1876, State Board of Health, Lansing. Postage, 3 cents.

In all cases where known, the price of the book, and the name of the American publisher has been given.

HENRY B. BAKER, *Secretary.*

OFFICE OF STATE BOARD OF HEALTH, LANSING, MICH., July 30, 1880.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE MARINE HOSPITAL SERVICE OF THE UNITED STATES. April 1, 1880, to June 30, 1880.

BAILHACHE, P. H., Surgeon. Detailed as chairman of board for the physical examination of officers of the Revenue Marine Service, April 28, 1880. Detailed as chairman of board for the physical examination of candidates for appointment as cadets in the Revenue Marine Service, May 21, 1880. Detailed as medical officer Revenue Bark "Chase" during practice cruise, June 1, 1880.

MILLER, T. W., Surgeon. Detailed as chairman board of examiners to convene in New York, June 21, 1880, June 4, 1880.

LONG, W. H., Surgeon. Granted leave of absence for ten days from April 16, 1880, April 14, 1880. Detailed as member of board to select a site for a Marine Hospital at Memphis, Tennessee, May 12, 1880.

FESSENDEN, C. S. D., Surgeon. Detailed as member board of examiners to convene in New York, June 21, 1880, June 4, 1880. Granted leave of absence for eight days from June 13, 1880, June 9, 1880.

SAWTELLE, H. W., Surgeon. Detailed as recorder of board to select a site for a Marine Hospital at Memphis, Tennessee, May 12, 1880.

DOERING, E. J., Surgeon. Detailed as recorder board of examiners to convene in New York, June 21, 1880, June 4, 1880.

FISHER, J. C., Passed Assistant Surgeon. Granted leave of absence for thirty days from May 6, 1880, April 21, 1880. Detailed as recorder of board for the physical examination of officers of the Revenue Marine Service, April 28, 1880.

GODFREY, JOHN, Assistant Surgeon. To report to board of examiners for examination for promotion, June 4, 1880.

BROWN, F. H., Assistant Surgeon. To act as inspector of unserviceable hospital property at Boston, Mass., April 13, 1880. To report to board of examiners for examination for promotion, June 4, 1880.

GOLDSBOROUGH, C. B., Assistant Surgeon. Detailed as recorder of board for the physical examination of candidates for appointment as cadets in the Revenue Marine Service, May 21, 1880.

KEYES, H. M., Assistant Surgeon. To act as inspector of unserviceable hospital property at St. Louis, Mo., April 13, 1880.

MEAD, F. W., Assistant Surgeon. To act as inspector of unserviceable hospital property at San Francisco, Cal., April 19, 1880.

PORTER, F. D., Assistant Surgeon. Granted leave of absence for fourteen days from July 2, 1880, June 29, 1880.

PROMOTION.

FISHER, J. C., Passed Assistant Surgeon. Promoted to be Passed Assistant Surgeon, April 2, 1880.

AN irreparable loss is that sustained by the Vienna school and the profession of medicine the world over, in the death of Professor Hebra. As an author, clinician, and teacher of dermatology, he stood without a rival, and his numerous pupils scattered throughout all countries, must now promote that work which the great master only abandoned with his life. He was buried in the Hemals cemetery, in a grave not far from that of his old friend Rokitansky. Prof. Heschl and other eminent gentlemen made eloquent addresses at the funeral ceremonies.

SOCIETY MEETINGS.

Chicago Medical Society—Mondays, Oct. 4 and 18.

West Chicago Medical Society—Mondays, Oct. 11 and 28.

Biological Society—Wednesday, Oct. 6.

CLINICS.

MONDAY.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Prof. Holmes; 3 p. m., Otological, by Prof. Jones.

Mercy Hospital—2 p. m., Surgical, by Prof. Andrews.

Rush Medical College—2 p. m., Dermatological and Venereal, by Prof. Hyde.

Woman's Medical College—2 p. m., Dermatological and Venereal, by Prof. Maynard; 3 p. m., Diseases of the Chest, Prof. Ingals.

TUESDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Quine.

WEDNESDAY.

Chicago Medical College—2 p. m., Eye and Ear, by Prof. Jones.

Rush Medical College—2 p. m., Medical, by Dr. Bridge; 3 p. m., Ophthalmological and Otological, by Prof. Holmes; 3:30 to 4:30 p. m., Diseases of the Chest, by Dr. E. Fletcher Ingals.

THURSDAY.

Chicago Medical College—2 p. m., Gynaecological, by Prof. Jenks.

Rush Medical College—2 p. m., Diseases of Children, by Dr. Knox; 3 p. m., Diseases of the Nervous System, by Prof. Lyman.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Dr. Hotz.

Woman's Medical College—3 p. m., Surgical, by Prof. Owens.

FRIDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Davis.

SATURDAY.

Rush Medical College—2 p. m., Surgical, by Prof. Gunn; 3 p. m., Orthopædic, by Prof. Owens.

Chicago Medical College—2 p. m., Surgical, by Prof. Isham; 3 p. m., Neurological, by Prof. Jewell.

Woman's Medical College—11 a. m., Ophthalmological, by Prof. Montgomery; 2 p. m., Gynaecological, by Prof. Fitch.

Daily Clinics, from 2 to 4 p. m., at the Central Free Dispensary, and at the South Side Dispensary.